Exploratory and developmental trial of a family centred nutrition intervention delivered in Children's Centres

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Executive summary

The diets of preschool children are a cause for concern with low intakes of fruit/vegetables and high intakes of sugary foods and drinks. A poor diet in early life can have a significant impact on a child’s immediate and longer-term health, and contributes to broader health inequalities. Despite the public health significance of this area, there is a paucity of well-designed studies evaluating early years nutrition interventions.

Between June 2009 and October 2012, a study was undertaken to develop, implement and pilot a family centred nutritional intervention delivered in Children’s Centres across Islington and Cornwall. This exploratory randomised controlled trial follows the Medical Research Council’s guidance for designing and evaluating complex interventions. The Cherry programme (Choosing Healthy Eating when Really Young) was designed after a year conducting exploratory research, including the collection of qualitative and quantitative data which provided information of the nature of the problem and options for support. This was accompanied by a review of the background literature, as well as a process of consultation with a range of relevant stakeholders, including staff working in early years, health professionals, children’s centre staff, and most importantly, parents of young children.

Cherry was rolled out in children’s centres between October 2010 and November 2011. In total, 394 families with young children with a mean age of 28.8 months were recruited onto the study (with 199 in the intervention group), and 70% (n=304) followed up after 6 months. Children attending Cherry showed improvements in all dietary outcomes, increasing their fruit and vegetable intake and decreasing their sugary drinks and snack consumption. These results, although not statistically significant, show consistent, positive changes. Cherry had a greater effect in Islington than in Cornwall with more marked changes in dietary outcomes after six months. Parents’ diets improved only marginally and there was no change in secondary parental outcomes such as food involvement, food confidence and parental stress. Data gathered from the comprehensive process evaluation indicated that the intervention was very popular with parents and centre staff, and that the trial methodology including recruitment methods, randomisation procedures and measurement tools were both acceptable and feasible.

This study has comprehensively investigated the development, implementation and evaluation of a nutrition intervention in children’s centres in two diverse locations, Islington and Cornwall. The results of the exploratory trial provide detailed insights valuable for the future planning and conduct of a large scale definitive randomised controlled trial of a nutrition intervention in early years settings.
Chapter 1 – Background

1.1 Introduction

The diets of preschool children are a cause for concern with low intakes of fruit/vegetables and high intakes of sugary foods and drinks. A poor diet in early life can have a significant impact on a child’s immediate and longer-term health, and contributes to broader health inequalities (World Health Organisation 2003). Despite the public health significance of this area, there is a paucity of well-designed studies evaluating early years nutrition interventions (National Institute for Health and Clinical Excellence 2008b). Between 2004 and 2006 the first children’s Centres were established across the UK to provide Early Years education, family support and health services to families living in more deprived neighbourhoods. This setting provides an ideal opportunity to promote healthy eating in families with young children.

Between June 2009 and October 2012, a study was undertaken to develop, implement and pilot a family-centred nutritional intervention delivered in Children’s Centres across Islington and Cornwall. This report will present an overview of the background of the study, followed by a description of the methodology employed. Details will then be presented of the findings from the initial exploratory work and baseline data from the exploratory trial. A description will then be presented of the nature of the intervention developed and insights gained on the intervention from the process evaluation. Results from the 6-month follow up in the exploratory trial will then be outlined, and finally a discussion chapter will be presented.

1.2 Importance of early years

Good nutrition in early life is vitally important for healthy growth, development and long term health status. A poor diet, combined with low levels of physical activity, can have a significant impact on a child’s immediate and long term health (World Health Organisation 2003). In recent decades, life-course epidemiologists have highlighted the importance of early life in relation to long term health (Kuh and Ben Shlomo 2004). Various pathways and processes have been proposed linking early life circumstances to later health outcomes. One potential mechanism is through ‘nutrition programming’ in which the early years of life influences the development of diseases in adulthood by affecting growth, organ development and metabolic changes at cellular level (Koletzko et al. 2012). Public health research has also highlighted the effect of early life events on patterns of health inequalities, both in childhood and later adulthood (Marmot and Wilkinson 2006). It is therefore critically important to support and encourage families with young children to give them the best start in life. An important element of this support is the development of healthy eating behaviours in early childhood.

In recognition of the critical importance of early life on future health and development, a raft of government policies and initiatives have been implemented in recent years. Since 2004, a national network of 3,600 Sure Start Children’s Centres has been established to provide support to parents and pre-school children across a range of services, including childcare, education, health and family support services (House of Commons 2010). The Marmot Review on Health Inequalities gave particular prominence to the early years, recommending that “Action to reduce health inequalities must start before birth and be followed through the life of the child. Only then can the close links between early disadvantage and poor outcomes throughout life be broken” (Marmot 2010). It recommended increased expenditure on the early years, more support for families and good quality
early years education and childcare; all to be provided progressively across the social gradient in society. In terms of nutritional policy in 2006 the Welfare Food Scheme was replaced by Healthy Start which includes vouchers for a broader range of foods including fruit and vegetables (Department of Health 2012). There has also been a push to improve the quality of food provision in early years settings. In 2006, the Scottish Executive produced nutritional guidance for early years education and childcare settings (Scottish Executive 2006). In the same year, the Caroline Walker Trust produced updated guidance including recommendations for nutrient-based standards for this sector (Caroline Walker Trust 2006). In 2010, following the introduction of food-based and nutrient-based standards for schools, the Government appointed an advisory committee to make recommendations for guidance for early years settings around food and nutrition (Advisory Panel on Food and Nutrition in Early Years 2010). In response to those recommendations, the School Food Trust produced voluntary food and drink guidelines for early years settings in England, along with supporting resources (School Food Trust 2012). Finally, “Healthy Lives, Healthy People”, the Government’s obesity prevention strategy has also highlighted the need to adopt a life-course approach through focusing on improving early life circumstances and the promotion of breastfeeding and good childhood nutrition (Cross-Government Obesity Unit 2008; Department of Health 2011).

1.3 Impact of diet on child health

Nutrition is a key determinant of health and important in the prevention of a range of chronic diseases (World Health Organisation 2003). Poor nutrition is not only associated with disease but also is a major contributor to health inequalities (James et al. 1997). This section will briefly highlight the evidence linking nutrition with child health.

1.3.1 Dental caries

Although overall rates of dental caries have declined substantially in recent decades, this is still a very common condition affecting a large proportion of children (Petersen et al. 2005). The condition causes considerable pain/discomfort, infection and can lead to problems eating and speaking. The extraction of teeth due to dental caries is the main cause of hospital admissions for general anaesthesia in the UK (Moles and Ashley 2009). Dental caries is caused by high sugars (non-milk extrinsic sugars – NMES) consumption (World Health Organisation 2003). Both the frequency and amount of NMES are important in causing caries. The condition is wholly preventable and is now increasingly affecting children from disadvantaged and poorer backgrounds (Petersen et al. 2005; Watt and Sheiham 1999). NMES should provide less than 10% of total food energy and consumption should be limited to mealtimes and not exceed four times per day (World Health Organisation 2003).

1.3.2 Micronutrient deficiencies

Vitamin D and iron deficiencies are common in childhood and may affect growth and development. Vitamin D deficiency is caused by lack of sunlight exposure and inadequate dietary sources such as fish, eggs and fortified foods. The Reference Nutrient Intake (7 µg/day) may be unachievable through dietary sources alone. According to the latest National Diet and Nutrition Survey (NDNS), the mean intake of vitamin D for children aged 1.5 to 3 years is 32% of the Reference Nutrient Intake (RNI) including dietary supplements, or 26% from food sources only (Bates et al. 2012). Vitamin D has an important role in calcium absorption and therefore deficiency has implications for bone health, with the ultimate outcome being rickets (or osteomalacia in adults). Vitamin D deficiency (a plasma 25-
hydroxy vitamin D concentration <25 nmol/L) and insufficiency (a plasma 25-hydroxy vitamin D concentration 25-50 nmol/L) have become more common in recent years, with children from ethnic minority groups most affected (Absoud et al. 2011; Ahmed et al. 2011; Davies et al. 2011; Kehler et al. 2012). Iron deficiency occurs when children do not consume sufficient iron-rich foods such as red meat, dark green leafy vegetables, beans, pulses, nuts and fortified foods. The mean intake of iron for children aged 1.5 to 3 years is 95% of the Reference Nutrient Intake (RNI) including dietary supplements, or 93% from food sources only (Bates et al. 2012). However, 7% of children that age consume below the Lower Reference Nutrient Intake (LRNI) (Bates et al. 2012). In severe cases of iron deficiency, iron deficiency anaemia can affect neurological development and growth in children. (See also table 1.4a).

1.3.3 Overweight and obesity

Obesity is the main diet-related public health concern in the UK and for many has its origins in childhood. A complex array of factors may contribute to the development of childhood obesity, including maternal weight status, maternal diet during pregnancy, genetic factors, formula feeding, and sedentary behaviours (Koletzko et al. 2012; Robinson et al. 2012). However, diet remains one of the most important factors and we now live in a society of overconsumption. Improving children’s diet in infancy and early childhood is very important to prevent obesity (Barker 2007). The prevalence of childhood obesity (all children aged 2-15 years) increased from 11.7% in 1995 to 18.9% in 2004 (The NHS Information Centre for Health and Social Care 2011a). This alarming trend has levelled off and started to decline in recent years, with 16.0% childhood obesity (all children aged 2-15 years) in 2010 (The NHS Information Centre for Health and Social Care 2011a). However, obesity in boys (aged 2-15 years) increased from 16.1% to 17.1% in 2010 after several years of decline (The NHS Information Centre for Health and Social Care 2011a). The National Child Measurement Programme clearly shows that prevalence of obesity increases with child age (The NHS Information Centre for Health and Social Care 2011b). In 2010, 9.4% of Reception children (aged 4-5 years) were obese, compared to 19.0% of Year 6 children (aged 10-11 years) (The NHS Information Centre for Health and Social Care 2011b). This increase continues into adulthood, with 26.1% of adults classified as obese in 2010 (The NHS Information Centre for Health and Social Care 2011a).

1.3.4 Longer term health

Poor diet and obesity are associated with the development of non-communicable diseases such as cardiovascular disease, diabetes, osteoporosis and some cancers (Barker 2007; World Health Organisation 2003). Rates of type 2 diabetes are predicted to rise by 40% in Europe by 2030 compared to 2000 (Koletzko et al. 2012). These diseases typically occur in later life, but establishing good dietary habits in early childhood is essential for their prevention.

1.4 Current dietary problems

Summary results from National Diet and Nutrition Survey (NDNS) rolling programme (2008-2011), for children aged 1.5 to 3 years are presented in table 1.4a; Bates et al. 2012). Concern remains over the relatively low intakes of vegetables and the high intake of NMES, particularly from soft drinks.

| Table 1.4a Summary of NDNS results for children aged 1.5 to 3 years |
|-------------------|-----------------------|
| **Mean daily intakes of various** | **Combined Yrs 1-3** |


### Foods, drinks and nutrients 2008/09-2010/11

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Vegetables (grams)*</td>
<td>73</td>
</tr>
<tr>
<td>Fruits (grams)*</td>
<td>103</td>
</tr>
<tr>
<td>Fruits and vegetables (grams)*</td>
<td>176</td>
</tr>
<tr>
<td>Fruit juice (grams)</td>
<td>65</td>
</tr>
<tr>
<td>Soft drinks, not low calorie (grams)</td>
<td>73</td>
</tr>
<tr>
<td>Soft drinks, low calorie (grams)</td>
<td>194</td>
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**Nutrients**

<table>
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<tbody>
<tr>
<td>Total energy (kcal)</td>
<td>1137</td>
</tr>
<tr>
<td>Total sugars (% total energy)</td>
<td>24.8</td>
</tr>
<tr>
<td>NMES sugars (% total energy)</td>
<td>11.8</td>
</tr>
<tr>
<td>Total fat (% total energy)</td>
<td>34.0</td>
</tr>
<tr>
<td>Saturated fat (% total energy)</td>
<td>14.8</td>
</tr>
<tr>
<td>Vitamin D (% RNI (µg))*</td>
<td>26 (NA)</td>
</tr>
<tr>
<td>Iron (% RNI (mg))*</td>
<td>93 (NA)</td>
</tr>
</tbody>
</table>

*not including potatoes or fruit juice; including vegetables from composite dishes

Of particular concern are the poor diets of children living in disadvantaged and low income households. In the Low Income Diet and Nutrition Survey, the average daily consumption of fruit and vegetables was 1.6 portions for boys and 2.0 portions for girls (aged 2-18 years) (Nelson et al. 2007). NMES intakes were also higher in this sample of low income families compared to NDNS (17.1% of total energy for boys and 16.5% of total energy for girls) and drinks contributed 41% of the NMES in boys and girls (Nelson et al. 2007).

These dietary problems and the health implications outlined above illustrate the need for nutrition interventions targeting pre-school children. The replacement of sugary items with healthier options (including complex carbohydrates for energy, plenty of fruits and vegetables and milk or water to drink) would improve the micronutrient content of children’s diets and reduce the risk of childhood overweight and obesity, micronutrient deficiencies and dental caries.

### 1.5 Factors influencing children’s diets

Future interventions designed to promote good nutrition in early childhood need to understand and address the factors influencing and determining children’s diets. A complex array of innate, familial, behavioural, social, environmental and political factors influence children’s eating habits and food intakes (Cooke 2004; World Health Organisation 2003). These factors are also directly and indirectly linked to the broader social determinants of health (Marmot and Wilkinson 2006).

Early research showed that infants develop innate preferences for sweet foods, but these are modifiable through early exposure (Beauchamp and Moran 1982; Steiner 1979). This early exposure to a diverse range of tastes depends on parental food choices, since parents are the primary food providers for young children and also important role models (McCaffree 2003). A review of parental influences on eating behaviour suggested that early years nutrition interventions should encourage parents to provide early, positive and repeated experiences with foods such as vegetables to encourage children to like them (Savage et al. 2007). These kinds of strategies can prevent the development of fussy eating behaviours or food neophobia (Dovey et al. 2008).
However, parents’ food choices and practices are also influenced by broader determinants. For example, in a qualitative study, women of low educational attainment in Southampton reported a lack of control over food choices for themselves and their families because of the cost of healthy food, the need to avoid waste, the temptation to snack and limited cooking skills (Barker et al. 2008). Low parental education and/or income have been associated with poor diets for themselves (Barker et al. 2008) and their young children (Sausenthaler et al. 2007; Sheehy et al. 2008). Another study of low income mothers in Scotland found that, despite good knowledge of healthy eating, risk of poor diet among 2 year old children increased when mothers were confused about healthy eating advice, concerned that the child does not eat enough, or unlikely to limit sweets; when families did not regularly eat meals together and when children were not offered previously rejected foods (Crombie et al. 2009).

Parental weight status is an important factor, especially with the prevalence of overweight and obesity. In some families, overweight parents may simply over-feed their children. In other families, parents may attempt to control their child’s food intake to prevent excess weight gain, but this strategy has been shown to have the opposite effect as restricted food become more desired (Anzman et al. 2010; Clark et al. 2007). Many children do not learn the ability to regulate their own food intake by responding to internal hunger and satiety cues (Anzman et al. 2010).

A systematic review of qualitative evidence on low-income mothers and nutrition highlighted the wealth of data on how mothers manage to cope in poverty but that future interventions should focus on developing enabling measures that tackle the underlying determinants of health (Attree 2005). This view was endorsed by a latter review of factors affecting the food choice of disadvantaged women which also highlighted the need for action on the interrelated and complex influences on food choice (Lawrence and Barker 2009). Simply providing more ‘healthy eating’ information to parents will not be enough to affect long term, sustainable behaviour changes (National Institute for Health and Clinical Excellence 2008b, 2008a). The next chapter will present an overview of the evidence of the effectiveness of interventions to improve the diets of young children and their parents.
Chapter 2 – Literature review of nutrition interventions targeting pre-school children

2.1 Scope, search methods and inclusion criteria

The scope of this literature review was nutrition interventions targeting pre-school children. It provides an overview of relevant studies selected from systematic reviews and an extensive review by NICE on the effectiveness of public health interventions to improve the nutrition of 2 to 5 year old children (National Institute for Health and Clinical Excellence 2008a). The following terms were used to search in PubMed and Web of Knowledge for systematic reviews: ‘systematic, review, nutrition, intervention, pre-school/young children’. Six recent systematic reviews were found (Bond et al. 2011; Ciampa et al. 2010; Hartman et al. 2011; Hesketh and Campbell 2010; Nixon et al. 2012; Skouteris et al. 2011); their methods and conclusions are summarised below. Five of these systematic reviews (Bond et al. 2011; Ciampa et al. 2010; Hesketh and Campbell 2010; Nixon et al. 2012; Skouteris et al. 2011) were concerned with the effectiveness of weight management or obesity prevention interventions, which often combine nutrition and physical activity components. The sixth review (Hartman et al. 2011) summarised components of interventions that contributed to attendance and effectiveness. Individual studies were only selected for this review when they met the following criteria:

- Intervention includes nutrition component
- Dietary assessment of child intakes
- Randomised controlled trial design

2.2 Overview of systematic reviews

Bond and colleagues reviewed the effectiveness of weight management schemes for the under-fives (Bond et al. 2011). They restricted the inclusion criteria to controlled trials with objective measures, which meant that only four randomised controlled trials were included. Three of these individual studies met our criteria (listed above) and are described below (Fitzgibbon et al. 2005; Fitzgibbon et al. 2006; Harvey-Berino and Rourke 2003). The review suggested that weight management interventions in this age group should include nutrition education for children and active engagement of parents/carers as role models of healthy eating. It concluded that further randomised controlled trials are needed, with longer term follow up and cost effectiveness studies.

Hesketh and colleagues reviewed interventions to prevent obesity in 0-5 year olds (Hesketh and Campbell 2010). Their inclusion criteria were much broader and 23 studies were included. Only seven of the studies met our criteria (Fitzgibbon et al. 2005; Fitzgibbon et al. 2006; Harvey-Berino and Rourke 2003; Johnson et al. 2000; Talvia et al. 2006; Wardle et al. 2003; Watt et al. 2006b), of which three were also included in the Bond review (Bond et al. 2011). The others were excluded mainly because they lacked a nutrition component. The review stated that the most successful interventions were designed to impact on knowledge and also skills, underpinned by social behavioural theory. Parental involvement was important and its importance for sustainable behaviour changes was emphasised. The research in this area was criticised for being ‘piecemeal’ (separate studies by different research teams) and lacking continuity to build the evidence base. The review concluded that behaviours contributing to obesity (including diet) can be positively influenced in a range of settings, but further research is urgently needed to improve the existing evidence base.
Ciampa and colleagues reviewed interventions to reduce obesity in children younger than two years (Ciampa et al. 2010). Twelve studies were included, but only four of these met our criteria (Harvey-Berino and Rourke 2003; Lagstrom et al. 1997; Simell et al. 2000; Talvia et al. 2004), of which one was included in both previous systematic reviews (Bond et al. 2011; Hesketh and Campbell 2010). The other studies were excluded for having no control group or no/limited dietary assessment of the child (and were also rated as poor in the systematic review). The review highlighted certain behaviours that should be targeted in interventions in infancy, one of which is the introduction of sweetened beverages (the others were not diet related). It concluded that future research should focus on designing rigorous interventions that target young children and their families.

In their review Hartman and colleagues focussed on the individual components of interventions (nutrition and physical activity) targeted to mothers of young children (Hartman et al. 2011). Seven studies were included, but none of these met our criteria since they did not assess the child’s diet and/or were not randomised controlled trials. The review stated that it is difficult to draw conclusions about which components of an intervention contribute to its effectiveness, and highlighted the need for process evaluations. It concluded that more evidence is needed, especially with regard to the promotion of healthy eating.

Skouteris and colleagues reviewed parental variables targeted in interventions designed to reduce the risk of childhood obesity in families of children aged 2-6 years (Skouteris et al. 2011). Eleven studies were included, of which six met our criteria (Bayer et al. 2009; Fitzgibbon et al. 2005; Haire-Joshu et al. 2008; Harvey-Berino and Rourke 2003; Shelton et al. 2007; Wardle et al. 2003) and three of these were also included in previous reviews (Bond et al. 2011; Ciampa et al. 2010; Hesketh and Campbell 2010). The other studies were excluded for having no nutrition component, no control group or no dietary assessment of the child. The review suggested that modification of parental variables (including knowledge, beliefs, behaviours, skills and strategies) may show promise as an obesity prevention strategy, but well-designed longitudinal studies are needed to identify causal influences.

Finally, Nixon and colleagues. reviewed effective behaviour change strategies underpinning pre-school and school based obesity prevention interventions aimed at 4-6 year olds (Nixon et al. 2012). Twelve studies were included, but only two studies met out criteria (Bayer et al. 2009; Fitzgibbon et al. 2006) and both were also included in previous reviews (Bond et al. 2011; Hesketh and Campbell 2010; Skouteris et al. 2011). The other studies were excluded either because they were undertaken in primary schools (children aged 5-6 and above) or they were not randomised or did not assess the child’s diet. The review found that successful interventions were more likely to include parental involvement such as: developing skills and behavioural capability, developing self-efficacy, educating parents and children about the benefits of healthy eating, modelling healthy eating.

### 2.3 Other reviews consulted

In addition to the systematic reviews described above, NICE also conducted a review of the effectiveness of public health interventions to improve the nutrition of 2 to 5 year old children (National Institute for Health and Clinical Excellence 2008a). This review identified five systematic reviews (from the period 1995-2003 so now out of date) (Ciliska et al. 2000; Contento et al. 1995; Elkan et al. 2000; Tedstone et al. 1998; Thomas et al. 2003) and six randomised controlled trials (Bannon and Schwartz 2006; Blom-Hoffman et al. 2004; Cottrell et al. 2005; Lagstrom et al. 1997; Lumeng and Hillman 2007; Wardle et al. 2003) examining interventions to promote healthy eating in
young children. Many of the studies included in these systematic reviews were dated pre-1990 and some were rated as poor. Only the more recent studies (1990 onwards) and those meeting our criteria have been summarised in this review. The NICE review concluded that "interventions for parents of young children.....were successful in improving children's diet where they were intensive, incorporated behavioural theories, gave clear message and were tailored to educational level and family resources. Interventions for children aged 2-5 years were successful in improving children's acceptance of novel or previously disliked foods if they included behavioural approaches, avoided a didactic approach, used food based activities, used repeated exposure, included food tasting and offered choice rather than simple exposure". It also highlighted the paucity of well-designed interventions and recommended more primary research.
2.4 Summary of individual nutrition intervention studies (RCTs) identified

To provide a more comprehensive account of the relevant background literature, details of the nutrition intervention studies identified from the systematic and NICE reviews are presented in table 2.4. It also includes a few studies not captured by the other reviews. Table 2.4 provides information on study characteristics, nutrition intervention components, dietary assessment methods and impact on children’s diets. Studies relating to the same intervention have been grouped together. Outcomes other than the child’s diet are not reported.

Table 2.4 Overview of individual intervention studies from systematic and NICE reviews

<table>
<thead>
<tr>
<th>Study</th>
<th>Intervention name</th>
<th>Setting and country</th>
<th>Brief description of intervention</th>
<th>Sample size</th>
<th>Dietary assessment method (child’s diet)</th>
<th>Follow up period</th>
<th>Impact of intervention (child’s diet comparing intervention/control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Johnson et al. 1993)</td>
<td>Community Mothers Programme</td>
<td>Home-based, Ireland</td>
<td>Mothers were trained to share their own experiences with new mothers, in order to increase their self-esteem and confidence.</td>
<td>262</td>
<td>24 hour recall (no details)</td>
<td>1 year (post-intervention)</td>
<td>More likely to consume appropriate amounts of animal protein, non-animal protein, wholefoods, vegetables, fruit and milk; sustained at 7 years for wholefoods, vegetables, fruit and milk.</td>
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<td>(Johnson et al. 2000)</td>
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<td>76</td>
<td>24 hour recall (no details)</td>
<td>7 years</td>
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<tr>
<td>(Harvey-Berino and Rourke 2003)</td>
<td>Obesity Prevention plus Parenting Support (OPPS)</td>
<td>Home-based, USA</td>
<td>Weekly home visits (16) by a peer educator, teaching mothers how improved parenting skills could facilitate the development of appropriate eating and physical activity behaviours in children.</td>
<td>43</td>
<td>Food records (3 days)</td>
<td>16 weeks (post-intervention)</td>
<td>Reduced energy intake.</td>
</tr>
<tr>
<td>(Wardle et al. 2003)</td>
<td>No name given (repeated exposure to vegetables)</td>
<td>Home-based, UK</td>
<td>Parents were asked to give their child a taste of the target vegetable every day for 14 days.</td>
<td>156</td>
<td>Taste tests of target vegetable</td>
<td>14 days (post-intervention)</td>
<td>Greater increases in liking, ranking and consumption of target vegetable.</td>
</tr>
<tr>
<td>(Watt et al. 2006b)</td>
<td>Infant Feeding Peer Support Trial (IFPST)</td>
<td>Home-based, UK</td>
<td>Low income mothers received in the intervention group received monthly home visits (peer support) when their babies were 3-12 months old.</td>
<td>312</td>
<td>24 hour recalls (3 days)</td>
<td>6 and 12 months (mid and post-intervention)</td>
<td>No significant differences in children’s nutrient intakes at 6 months, but children were more likely to be eating the same foods as the rest of the family and to be eating three meals per day.</td>
</tr>
<tr>
<td>Study (Year)</td>
<td>Intervention Name</td>
<td>Setting</td>
<td>Description</td>
<td>Duration</td>
<td>Measurement</td>
<td>Findings</td>
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<tr>
<td>Haire-Joshu et al. 2008</td>
<td>High Five for Kids</td>
<td>Home-based, USA</td>
<td>Four home visits, nutrition newsletters, a sing-along storybook and parent training.</td>
<td>1306</td>
<td>FFQ (past 7 days)</td>
<td>Fruit and vegetable consumption increased for normal weight children, but not for overweight children. Parents’ dietary change predicted children’s dietary change.</td>
<td></td>
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<tr>
<td>Lagstrom et al. 1997; Simell et al. 2000; Talvia et al. 2004; Talvia et al. 2006</td>
<td>Special Turku Coronary Risk Factor Intervention Project (STRIP)</td>
<td>Well baby clinics, Finland</td>
<td>Individualised dietary counselling provided to parents (from child age 7 months) and children (from age 7 years). Sessions were bimonthly until age 2 years and biannual thereafter. They continued until the child was 11 years old (note this intervention extends well beyond the pre-school age range).</td>
<td>1062</td>
<td>Food records (4 days)</td>
<td>Saturated fat and cholesterol intakes decreased throughout the study and remained significantly below the control group (Lagstrom et al. 1997; Simell et al. 2000; Talvia et al. 2004). Intervention boys consumed significantly more fruit (mean difference 10.1 g/day) and vegetables (mean difference 3.2 g/day) than controls; for girls there was no significant difference (Talvia et al. 2006). There was no difference in vitamin and mineral intakes between the groups.</td>
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<tr>
<td>Shelton et al. 2007</td>
<td>No name given (group education for parents of overweight children)</td>
<td>Community centres, Australia</td>
<td>Four weekly two-hour sessions attended by the parent only. The nutrition education components included visual aids, handouts, brainstorming exercises, practical demonstrations, worksheets, guided discussions. Children were aged 3-10 years.</td>
<td>43</td>
<td>Food diary (3 days)</td>
<td>Children’s energy intakes reduced in the intervention group and increased in the control group.</td>
<td></td>
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<tr>
<td>Fitzgibbon et al. 2005; Fitzgibbon et al. 2006</td>
<td>Hip-Hop to Health</td>
<td>Pre-schools, USA</td>
<td>Children participated in healthy eating and physical activity lessons for 14 weeks (40 minutes, three times weekly) with different topics in each lesson. The parents received weekly newsletters with similar content.</td>
<td>409</td>
<td>24 hour recalls (1 day)</td>
<td>Saturated fat intake (as % of energy intake) was lower in the intervention group at 1 year follow up, but not post-intervention or 2 year follow up. No other significant dietary differences between the groups (Fitzgibbon et al. 2005). No</td>
<td></td>
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<tr>
<td>Study</td>
<td>Intervention</td>
<td>Setting</td>
<td>Intervention Duration</td>
<td>Follow-up Method</td>
<td>Follow-up Duration</td>
<td>Findings</td>
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<tr>
<td>(Bayer et al. 2009)</td>
<td>Teachers were provided with training and educational materials, as well as information for parents, A telephone hotline was established for advising teachers and problem solving.</td>
<td>Tigerkids, Pre-schools, Germany</td>
<td>6 and 18 months</td>
<td>FFQ</td>
<td>Higher consumption of fruits and vegetables in the intervention group at 6 months, which was sustained at 18 months. Sub-group analysis by gender, overweight and parental education showed similar results. The effect on sugary drinks was less clear and there was no difference between the groups.</td>
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<tr>
<td>(Bannon and Schwartz 2006)</td>
<td>Three classrooms were randomly assigned to watch one of three 60 second videos: 1) a gain-framed nutrition message (the positive benefits of eating apples); 2) a loss-framed nutrition message (the negative consequences of not eating apples); 3) a control scene (children playing a game).</td>
<td>No name given (snack video), Pre-school, USA</td>
<td>50</td>
<td>Choice of animal cracker or apple for snack – no baseline assessment</td>
<td>After video (post-intervention)</td>
<td>The % of children who chose an apple was 57.1%, 55.6% and 33.3% respectively in groups 1-3.</td>
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<tr>
<td>(Blom-Hoffman et al. 2004)</td>
<td>Classroom component: 10 detailed lesson plans (taught over 5 weeks) focussed around the 5-a-day goal. Home component: 10 age-appropriate newsletters (for the children) reinforcing the messages from each lesson. A cookbook was also developed to encourage parental involvement. Lunchtime component: adult assistants asked the children to identify the fruits and vegetables in their lunches, provided verbal praise for eating fruits and vegetables, and rewarded consumption of fruits and vegetables with 5-a-day stickers.</td>
<td>No name given (multi-component nutrition education), Pre-school, USA</td>
<td>91 African-American</td>
<td>Visual estimates of plate waste were used to assess the amount of vegetables consumed during school lunch.</td>
<td>Post-intervention only</td>
<td>No improvements in vegetable consumption.</td>
<td></td>
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<tr>
<td>Study</td>
<td>Study Design</td>
<td>Intervention Details</td>
<td>Baseline</td>
<td>Follow-up</td>
<td>Outcome</td>
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<tr>
<td>(De Bock et al. 2012)</td>
<td>Pre-schools, Germany</td>
<td>Trained nutrition experts delivered 15 weekly two-hour sessions over a six month period, five of which actively involved the parents. Activities included familiarisation with different foods, preparing and eating foods together, children’s eating behaviours and how food affects the body.</td>
<td></td>
<td>FFQ 377</td>
<td>Children’s fruit and vegetable intakes increased by 0.23 and 0.15 portions per day respectively, equivalent to an overall increase of 6%. There were no significant changes in the amount of water or sugary drinks consumed.</td>
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<td>(Cooke et al. 2011)</td>
<td>Pre-schools, UK</td>
<td>Classes were randomly allocated to one of four groups: exposure plus tangible non-food rewards, exposure plus social reward (praise), exposure only and control. Each group participated in 12 daily exposure sessions over three weeks.</td>
<td></td>
<td>Taste tests of target vegetable 422 Day 15 (post-intervention), 1 and 3 months</td>
<td>All three exposure groups showed greater increases in liking of target vegetables than the control group (sustained at 3 months), with no difference between the three groups. All three exposure groups also showed greater increases in consumption of target vegetables than the control group; this was sustained at 3 months for the reward groups, but not for exposure alone.</td>
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<tr>
<td>(Remington et al. 2012)</td>
<td>Home-based, UK</td>
<td>Similar to above study, but parents delivered the daily exposure to the target vegetable at home. This time there was no ‘exposure only’ group.</td>
<td></td>
<td>Taste tests of target vegetable 173 3 weeks (post-intervention), 1 and 3 months</td>
<td>Combination of exposure plus tangible reward (sticker) was associated with increased liking and consumption of target vegetables, which were sustained at 3 months. Combination of exposure plus social reward</td>
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</tbody>
</table>
(Wen et al. 2012) Healthy Beginnings Home-based, Australia

Trained community nurses delivered key messages: breast is best, no solids for me until 6 months, I eat a variety of fruit and vegetables every day, only water in my cup, I am part of an active family. There were eight two-hour visits, one during late pregnancy and seven between 1-24 months.

<table>
<thead>
<tr>
<th>667</th>
<th>FFQ</th>
<th>24 months (post-intervention)</th>
</tr>
</thead>
</table>

Children in the intervention group were more likely to eat at least one serving of vegetables per day than children in the control group. There were no significant differences between the groups of fruit or ‘junk food’.

(praise) did not show greater increases than the control group.
2.5 Critical overview of intervention studies

2.5.1 Types of interventions

The studies described provide considerable evidence on the effectiveness of interventions targeting parents of pre-school children as the main caregivers and food providers. Parental components included peer support and education, in a variety of settings, designed to increase parents’ confidence, knowledge, skills (food-related and general parenting skills) and self-esteem (Haire-Joshu et al. 2008; Harvey-Berino and Rourke 2003; Johnson et al. 1993; Johnson et al. 2000; Lagstrom et al. 1997; Shelton et al. 2007; Simell et al. 2000; Talvia et al. 2004; Talvia et al. 2006; Watt et al. 2006b; Wen et al. 2012). There is also considerable evidence on the effectiveness of interventions targeting children themselves, often in pre-school settings. Child components included nutrition education sessions, taster sessions, repeated exposure and positive reinforcement (using tangible non-food rewards and/or verbal praise) (Bannon and Schwartz 2006; Bayer et al. 2009; Blom-Hoffman et al. 2004; Cooke et al. 2011; De Bock et al. 2012; Fitzgibbon et al. 2005; Fitzgibbon et al. 2006; Remington et al. 2012; Wardle et al. 2003). The interventions in pre-school settings often included parents as well, either by involving them in the sessions or send newsletters/materials home to reinforce healthy eating messages (Bayer et al. 2009; Blom-Hoffman et al. 2004; De Bock et al. 2012; Fitzgibbon et al. 2005; Fitzgibbon et al. 2006; Remington et al. 2012). Several studies highlighted the importance of clear messages, tailored support and using behaviour change theories/approaches.

2.5.2 Dietary outcomes studied and successful components

A variety of nutrition intervention studies have been conducted around the world with the aim of improving the diets of pre-schoolers. The most common dietary outcomes to be targeted were fruits and vegetables, and several intervention studies successfully increased children’s consumption of fruits and/or vegetables (Bayer et al. 2009; Cooke et al. 2011; De Bock et al. 2012; Haire-Joshu et al. 2008; Johnson et al. 1993; Johnson et al. 2000; Remington et al. 2012; Talvia et al. 2006; Wardle et al. 2003; Wen et al. 2012). These successful studies used a variety of approaches including parental support and education (Haire-Joshu et al. 2008; Johnson et al. 1993; Johnson et al. 2000; Talvia et al. 2006; Wen et al. 2012), nutrition education in pre-school settings (Bayer et al. 2009; De Bock et al. 2012) and trials involving repeated exposure to vegetables (Wardle et al. 2003) and the use of incentives/rewards (Cooke et al. 2011; Remington et al. 2012). These methods and components therefore merit further investigation. Other studies successfully reduced children’s energy intakes (Harvey-Berino and Rourke 2003; Shelton et al. 2007) and saturated fat intakes (Fitzgibbon et al. 2005; Lagstrom et al. 1997; Simell et al. 2000; Talvia et al. 2004). Most of these studies also used parental support, education and counselling (Harvey-Berino and Rourke 2003; Lagstrom et al. 1997; Shelton et al. 2007; Simell et al. 2000; Talvia et al. 2004); the other study used a combination of nutrition and physical activity in pre-schools, so it is not possible to determine the effect of nutrition education alone (Fitzgibbon et al. 2005). No studies were found that had successfully reduced children’s consumption of sugary foods and drinks – this remains an important challenge.

2.5.3 Methodological limitations

As the studies were either identified through published systematic reviews or our own review procedure, their overall methodological quality was relatively high. However, there are still considerable limitations which may help to develop and prioritise further research. One study did not collect baseline data, so although differences were shown between the intervention and control group,
these cannot be attributed to the intervention (Bannon and Schwartz 2006). Some studies only collected follow up data immediately post-intervention, so these studies did not show the longer term impact of the interventions (Blom-Hoffman et al. 2004; Haire-Joshu et al. 2008; Harvey-Berino and Rourke 2003; Wardle et al. 2003; Wen et al. 2012). On the other hand, some studies did have longer follow up periods and showed dietary improvements that were sustained for several months (Cook et al. 2011; De Bock et al. 2012; Remington et al. 2012; Shelton et al. 2007) or years (Bayer et al. 2009; Fitzgibbon et al. 2005; Johnson et al. 2000; Talvia et al. 2004; Talvia et al. 2006) after the intervention. Most of the studies used well established dietary assessment methods such as 24 hour recalls (Fitzgibbon et al. 2005; Fitzgibbon et al. 2006; Johnson et al. 1993; Johnson et al. 2000; Watt et al. 2006b), food records or diaries completed on multiple days (Harvey-Berino and Rourke 2003; Lagstrom et al. 1997; Shelton et al. 2007; Simell et al. 2000; Talvia et al. 2004; Talvia et al. 2006) and food frequency questionnaires (FFQ) (Bayer et al. 2009; De Bock et al. 2012; Haire-Joshu et al. 2008; Wen et al. 2012). The 24 hour recall method has been identified as most appropriate for dietary assessment in low income households (Holmes and Nelson 2009). Children’s food intakes were usually reported by the parents, except in studies where taste tests (Cook et al. 2011; Remington et al. 2012; Wardle et al. 2003) or visual estimates of plate waste (Blom-Hoffman et al. 2004) were used. Parental reporting does have limitations and may not be accurate, especially when some foods are consumed outside the home (Andersen et al. 2011), but child reporting is even less reliable in the pre-school age range. Another limitation in some studies was small sample size (n<100) (Bannon and Schwartz 2006; Blom-Hoffman et al. 2004; Harvey-Berino and Rourke 2003; Shelton et al. 2007).

Finally, many of the studies lacked representative samples or failed to address nutritional inequalities. Although the studies were conducted in several different countries: UK, USA, Australia, Germany, Finland and Ireland, only three studies in the USA specifically focussed on ethnic minority groups (Blom-Hoffman et al. 2004; Fitzgibbon et al. 2005; Fitzgibbon et al. 2006) and one study in Germany included one third of children from an immigrant background (De Bock et al. 2012). It is assumed that most other studies had predominantly White samples (ethnicity was often unreported). Four studies recruited participants only from disadvantaged areas (Johnson et al. 1993; Johnson et al. 2000; Watt et al. 2006b; Wen et al. 2012).

2.6 The need for more intervention studies

This review highlights the need for further research to establish the most effective means of improving the diets of pre-school children. The evidence suggests that a combination of parent and child intervention strategies, as well as action on creating a ‘whole settings’ approach in early years settings would have the greatest impact (National Institute for Health and Clinical Excellence 2008a). Whilst there is considerable evidence on ways to increase consumption of fruits and vegetables, very little evidence exists to support other necessary dietary improvements such as a reduction of NMES. Future studies must use robust study design and dietary assessment methods to show the true impact of nutrition interventions. It is also important to design studies with follow-up periods sufficiently long to show which dietary changes are sustained. There is also a need for more studies in low income communities where more dietary support is needed. Study samples also need to reflect the ethnic and socio-economic diversity of the population. Only four studies included in this review were conducted in the UK, one of which focussed on infant feeding (Watt et al. 2006b) and the others focussed on strategies to increase children’s liking/consumption of one target vegetable (Cook et al. 2011; Remington et al. 2012; Wardle et al. 2003). Therefore, more studies are needed in the UK to replicate those from overseas and provide evidence for a greater range of nutrition intervention components and strategies.
In the UK, Children’s Centres provide an ideal setting in which to deliver nutrition interventions to young children and their parents. They are located in disadvantaged areas and they engage in community outreach work, which provides an opportunity to target families most in need of support. Children’s Centres are increasingly required to adopt a ‘healthy settings’ approach and therefore welcome nutrition intervention opportunities.

### 2.7 Aim and objectives of study

**Aim:** To develop and pilot a family centred nutrition intervention delivered in Children’s Centres.

**Stage 1 Objectives:**
1. To explore, in depth using qualitative methods in a sample of parents/guardians and Children’s Centre staff, the factors influencing pre-school children’s diets, the barriers to change, preferred options for interventions to promote healthier eating practices in the early years setting and family environment, and the best ways of getting parents actively engaged in any food related activities.
2. To assess, through a quantitative survey with a sample of parents/guardians of pre-school children attending Children's Centres, the extent and nature of dietary problems, key barriers to be addressed within the family, and attitudes towards nutritional support provided by Children's Centres.
3. To assess, through a quantitative survey with all heads of Children's Centres in the study areas the current food and nutrition policies, food related activities taking place with both children and families, and the training, support and resource needs of staff.

**Stage 2 Objectives:**
4. To develop a nutritional intervention aiming to promote healthy eating in the Children's Centre, and through parent outreach, in the family setting too.
5. To conduct a pilot study of the nutritional intervention to assess its feasibility, acceptability and impact in the early years and family setting, and most appropriate evaluation methods.
6. To make recommendations on conducting a definitive randomised controlled trial of the intervention.
Chapter 3 - Methodology

3.1 Introduction

This chapter will provide an overview of the overall study design and describe the preliminary exploratory quantitative and qualitative work conducted in the first phase of the study. A detailed account will then be given of the exploratory randomised controlled trial that evaluated the Children’s Centre nutrition intervention, the Cherry programme. Finally, details will be presented of the content and delivery of the Cherry programme.

3.2 Overview of study design

As outlined by the MRC guidance, the development and evaluation of complex interventions involves 4 key stages:

- development,
- feasibility/piloting,
- evaluation,
- implementation (Medical Research Council, 2008).

The initial development stage is crucial in identifying the evidence base and appropriate theory for the intervention. At this stage gaining a detailed understanding of the nature of the problem to be addressed is also fundamentally important. The next stage involves feasibility and pilot testing of the intervention through conducting an exploratory trial. Undertaking an exploratory randomised controlled trial is considered best practice to assess the acceptability and feasibility of the intervention, test recruitment and retention rates, test acceptability and utility of measurement tools and determine intra-cluster correlation coefficients and effect estimates to inform sample size calculations for future definitive trials. The penultimate stage is the evaluation of the intervention using a full scale randomised controlled trial designed to assess its effectiveness and cost-effectiveness. The final phase focuses on the subsequent implementation of the intervention in terms of assessing its dissemination and longer-term impact.

In this study the first two stages of the MRC guidance were undertaken as outlined below.

3.2.1 Steps in study

The study was carried out between May 2009 and September 2012, during which time the following key stages were undertaken:

- Stage 1 (May 2009-September 2010): Development of study including local stakeholder engagement, exploratory quantitative and qualitative work and consultations
- Stage 2 (October 2010 –September 2012): exploratory randomised controlled trial, the Cherry programme

Figure 3a provides an overview of the main stages that were undertaken. Each phase will now be explained in greater detail.
Figure 3a Overview of main stages of study

Stage 1: Stakeholder engagement and exploratory research
- Study protocol finalised
- Ethical approval obtained
- Familiarisation of study areas
- Initial engagement with local stakeholders
- Focus groups with parents and staff
- Questionnaire survey with parents
- Questionnaire survey with children’s centre managers
- Invitation to all CCs to participate
- Randomised selection of 16 interested CCs
- Randomised allocation to intervention/control groups

Development of intervention - The Cherry Programme
- Exploring relevant theories
- Review of other interventions

Stage 2: Exploratory Trial
- Recruitment of 394 families
- Baseline data collection

Delivery of Cherry programme
- Reminder sent to families at 3 months
- Follow up data collection at 6 months

Process evaluation
- Data coding, data entry and final analysis
3.3 Ethical approval

Prior to commencing the study, full ethics approval was received from Camden and Islington Community Research Ethics Committee (REC Reference: 09/HO722/56) (see appendix 1).

3.4 Study setting

3.4.1 Study population

Cornwall (rural study location) and Islington (urban study location) were chosen to represent a diverse range of low-income communities across England. The Borough of Islington is located in inner London and was ranked the sixth most deprived district in England in 2007. Cornwall has a history of disadvantage arising from its geographical location (an isolated county in SW England) and the decline of traditional industries (mining, fishing, agriculture, textiles). Its most deprived district, Penwith, was ranked the 21st most deprived district in England in 2007 (Department of Health, 2007).

3.4.2 Children’s centres

Children’s centres provided the setting for recruitment of families and delivery of the intervention. Children’s centres are government-funded early years organisations where children under five and their families can receive integrated services and support, such as access to health and parenting services, advice and information on health, training and return to work, and in some areas high quality early years child care (Department for Education 2012).

3.5 Stage 1: Exploratory development phase

3.5.1 Initial engagement with local stakeholders and establishing local steering groups

A key practical measure in the development of any community-based intervention is engagement with local stakeholders to understand the local context and to consult on the nature of the proposed intervention. Members of the study team in both study sites (Islington and Cornwall) initially visited a wide range of key local stakeholders based in Local Authorities, community health services and voluntary sector organisations. In particular, a major effort was made to engage with children’s centre staff in both areas to understand more fully what was currently happening in terms of nutritional support provided and the potential for developing a new intervention. Local steering groups comprising representatives of the different sectors were formed in both areas to provide an on-going consultation forum during the development and implementation stages of the study. In Islington, the local steering group was joined with an existing steering group for Healthy Children’s Centres to avoid duplication and strengthen ties with local services. The steering groups helped guide the researchers to other key people in the Children’s Centres to allow the preliminary work to be conducted.

3.5.2 Understanding the nature of the problem and options for an intervention

A mixed methods approach using both qualitative and quantitative techniques was used to explore with parents/guardians and children’s centre staff, factors influencing young children’s diets, barriers
to change and options for developing a supportive intervention. The exploratory phase had three objectives:

1: To explore qualitatively with parents/guardians and early years staff, factors influencing young children's diets, barriers to change and nature of support needed
2: To assess quantitatively, parental/guardian views on nutritional problems and options for developing interventions in children's centres
3: To survey existing practices and policies in children's centres with centre managers

Two scientific papers have been published which describe the methodology and results of the exploratory research (Hayter et al. 2012; Ohly et al. 2012)(see appendices 2 & 3).

3.5.3 Stage 1: Objective 1: To explore qualitatively with parents/guardians and early years staff, factors influencing young children’s diets, barriers to change and nature of support needed

Four focus groups with parents (n= 39) and four separate focus groups with staff (n=24) were carried out (two of each in Islington and Cornwall). In Cornwall where some families live in very remote areas and have problems accessing local services such as children’s centres, 4 additional individual interviews were also conducted.

3.5.3.1 Creating topic guides for parents/guardians
A topic guide was initially developed by the research team and piloted with a group of 12 parents (who were not subsequently part of the focus groups) to assess its suitability and clarity. Following the piloting, minor amendments were made to the guide. All questions were open-ended and explored parental accounts of the factors influencing their children’s eating habits, what their children’s ‘typical’ diet consisted of, and whether parents had had concerns in the past about their children’s diets and attempted to make any changes (see appendix 4). Each focus group began with a modified version of ‘Circle Time’ to act as an icebreaker (Mosley 1998). Participants were shown examples of confectionery and sugary drinks specifically marketed at young children and asked to discuss their views on these items. This exercise helped participants to start talking in an open and relaxed manner.

3.5.3.2 Sample of parents/guardians
Two centres were selected in each location to take part. Based upon an assessment of their level of engagement with nutrition related activities, a maximum variation sampling method (a theoretical approach to ensure sample diversity) was used to purposively select the children’s centres in each location (Patton 2002). This method ensured that four centres with different levels of prior experience in delivering nutrition activities were included in the study. As Cornwall has a significantly larger land area than Islington, as well as a large rural population, two additional selection criteria were used in Cornwall: centres were selected by geographical locality (one in the north and one the south of the county) and only centres serving rural populations rural settings were included in the sample. All of the selected centres in both Islington and Cornwall were located in areas of multiple deprivation (Indices of Deprivation 2010).

Within each children’s centre, individual participants were recruited through posters displayed in the reception areas and with the help of centre staff who approached parents using the centre facilities. To ensure a diverse mix of participants, a particular effort was made to invite parents who centre staff considered were socially isolated and in need of support. As an incentive to participate in the focus
groups, all parents were offered the opportunity to enter a prize draw to win £40 worth of high street vouchers. All participants signed a consent form prior to participating (see appendix 5).

3.5.3.3 Individual interviews with parents/guardians
Interviews were arranged by a health visitor, who then accompanied one of the research team to the participants’ homes; this allowed parents who did not wish to attend a children’s centre but wished to take part in this study to be included. The same questions were used for both the individual interviews and focus groups, with the addition of some questions in the individual interviews on accessibility to services and support.

3.5.3.4 Focus group with staff
A similar methodology was used to conduct focus groups with staff. The same centres where the parents focus groups took place were selected (however due to poor weather, one focus group in Cornwall was cancelled, with repeated and unsuccessful attempts to rearrange it). The research team asked the head of each centre to select a group of staff to take part in the focus group; they were asked to include a range of staff from all levels and include nursery workers, members of the management, reception and outreach staff where possible.

A topic guide was developed to explore staff accounts of the factors influencing children’s eating habits and the perceived quality of the diet of children using the children’s centres. They were asked about the most common problems they encountered in their work concerning food and healthy eating, how much control and influence staff felt they had over children’s eating, what nutrition interventions had worked in the past and ways in which children’s centres could help parents with their children’s eating habits and best engage with parents (see appendix 6).

3.5.3.5 Data analysis
Interviews were digitally recorded (audio only) and transcribed verbatim. Transcripts were checked for quality, coded and entered into Microsoft Excel. The data were analysed using framework analysis (Green and Thorogood 2004; Ritchie and Spencer 1994). Framework analysis involves five distinct but interconnected stages of analysis: familiarisation of the data, identifying and creating a thematic framework, indexing, charting and mapping, and finally, interpretation (Ritchie and Spencer 1994). This method is designed specifically for use in applied research.

3.5.4 Stage 1: Objective 2: To assess quantitatively, parental/guardian views on nutritional problems and options for developing interventions in children’s centres

3.5.4.1 Questionnaire development
A questionnaire survey was carried out to provide a quantitative assessment of the key issues identified by parents in the focus group discussions, to provide further data on the extent and nature of the dietary problems parents encounter, and their views on the support needed to promote healthy eating in the family environment.

3.5.4.2 Sample
The minimum required sample size (200) was based upon similar studies assessing barriers for healthy eating and physical activity in school aged children (e.g. the APPLE project in New Zealand) (Williden et al, 2006). As there are more children’s centres in Cornwall than Islington, the number of centres selected was greater in Cornwall (n=10) than Islington (n=6). It was assumed that at least 6
completed questionnaires could be obtained from each stay and play session (6 x 16 = 96), plus at least 15 completed questionnaires from each day care setting (15 x 16 = 240); however, it was later realised that children’s centres in Cornwall do not provide day care, so the sample in Cornwall came entirely from stay and play sessions.

3.5.4.3 Selecting children’s centres
Complete lists of ‘main’ children’s centres in Islington and Cornwall were obtained from the local authorities. Centres that had participated in the focus groups were excluded. From the remaining centres, 10 in Cornwall and 6 in Islington were randomly selected and contacted for permission to collect data. When a children’s centre was not receptive to data collection, it was replaced with the next centre on the randomised list.

3.5.4.4 Developing/piloting questionnaires
The questionnaire was drafted using the research protocol and other questionnaires used in pre-school studies. The research managers and steering group members provided comments and guidance at various stages of development. A pre-pilot exercise was undertaken with a group of students studying for an MSc in Dental Public Health at UCL (n=7) to initially assess the clarity and formatting of the questions. The questionnaire was then piloted with two groups of parents, one in Cornwall and one in Islington (n=14) using standard questions e.g. did you find the questionnaire easy to complete (all replied yes), what else could we have asked? (No suggestions were given that were appropriate for the aim of the questionnaire.) Some changes were made based on comments received during the pilot. For example some suggestions were made to improve the question numbering, change some words and simplify the introduction on the first page. The final draft was agreed by all researchers involved before printing (see appendix 7).

The final questionnaire consisted of a variety of multiple-choice and open-ended questions. Firstly, parents were asked about basic demographic and social characteristics such as gender (parent/child), age (parent/child), marital status, ethnicity, employment status and educational attainment. Level of educational attainment was grouped into three categories: ‘low’ (none or GCSE), ‘medium’ (A Level or Diploma) or ‘high’ (University or professional qualification). Parents were asked about factors influencing food choice: It is important to me that the food I serve to my child on a typical day is.....familiar to my child; something my child likes; something the whole family likes; quick and easy to prepare; easily available in local shops or markets etc. They were asked to indicate whether each factor was ‘very important’, ‘moderately important’ or ‘not important’. Parents were then asked what sort of healthy eating support they would like: Which of the following would you find useful at your children’s centre? Learning about what is a healthy balanced diet; preparation and cooking of foods; recipe ideas for the children; overcoming fussy eating; introducing new foods etc. Parents were asked to indicate whether each one would be ‘very useful’, ‘moderately useful’ or ‘not useful’. Space was available for parents to add their own suggestions about support they would like regarding healthy eating.

3.5.4.5 Administering questionnaires
The researchers attended ‘stay and play’ and other parent/child sessions to collect questionnaire data from parents. Parents were approached individually and asked if they would like to complete a questionnaire. The researchers explained the purpose of the study briefly and showed parents the cover sheet with further information. They also told parents that a more detailed information sheet was available if they wanted to read it. The researchers checked with each parent that they had a child
between 2-5 years and asked them to complete the questionnaire about that child – this was also written on the cover sheet. Each parent signed a consent form and then completed the questionnaire at their leisure (whilst playing) (see appendices 7 and 8). The researchers were available to answer questions and collect/check the completed questionnaires. The questionnaire included a space to provide contact details for entry into the prize draw, which was offered as an incentive/reward for completion.

At some centres, members of staff were asked to administer questionnaires during other sessions and these were returned to the researcher by post or collected. This was particularly useful in Cornwall where some sessions are only attended by a few parents and travelling distances are greater. In Islington, some questionnaires were distributed via the day care services.

3.5.4.6 Data analysis
Data was entered into Excel according to an agreed protocol. SPSS was used to summarise and analyse the questionnaire data. The following statistical tests were used: Pearson Chi square and Chi square test for trend (when appropriate for ordinal exposures) for categorical outcomes and independent samples t-test for continuous outcomes. A p-value of less than 0.05 was regarded as statistically significant.

Parents were compared by level of educational attainment to identify the type of parents in greatest need of nutrition intervention. Results were summaries for both locations combined unless otherwise indicated. Parents were also compared between the two locations, to identify any geographical differences in factors influencing food choices and healthy eating support required.

3.5.5 Stage 1: Objective 3: To survey existing practices and policies in children's centres with centre managers

3.5.5.1 Early years settings approach
To determine what food related activities and policies already took place at the children’s centres, a brief self-complete questionnaire was developed. Although nutrition environments are very important it is quite a challenge to assess their impact due to a limited range of suitable evaluation measures available (Glanz et al. 2005).

3.5.5.2 Sample size
Questionnaires (total=52) were sent to the ‘main’ children’s centres in Cornwall (n=36) and all children’s centres in Islington (n=16). Each one was addressed to the children’s centre manager by name. Some managers in Cornwall cover two or three main centres so they were asked to complete more than one questionnaire.

3.5.5.3 Developing/piloting questionnaires for centre heads
A questionnaire was developed in consultation with members of the project steering group. The questionnaire was then piloted with two children’s centre managers in Cornwall and subsequently some minor changes were made. There were slight variations between the Cornwall and London versions because some questions were tailored to the location e.g. Which of these [location specific] healthy eating programmes has the centre delivered in the last 12 months or planned for the next 3 months? (see appendix 9).
The final questionnaire consisted of a variety of multiple-choice and open-ended questions. Staff were asked how long they had worked at the centre, how the centre was funded and how big it was (number of nursery spaces and number and types of staff). They were asked to provide details on food provision at the children’s centre, e.g. Do staff prepare the children’s lunches on site? Is there a catering contract? and whether there were restrictions on which types of foods could be brought in by parents. Managers were asked to provide details on staff training relating to food and nutrition, and any other food-related services and activities taking place at the centre (both current and planned in the following 3 months). They were asked their opinions on the same set of healthy eating support options as parents and who would be best placed to deliver the support, about their centre’s links with local services, and a space was provided to add any other comments. They were asked to include a copy of the centre’s food policy if there was one.

3.5.5.4 Administering questionnaires
Questionnaires were administered by post. Stamped addressed envelopes and cover letters were enclosed to increase the response rate. Consent was assumed when centre managers returned the completed questionnaires. Managers were assured (in the cover letter) that their answers would be treated confidentially. They were asked to return the questionnaires by a certain date, after which outstanding questionnaires were chased up by email.

3.5.5.5 Data analysis
Due to the small sample size, it was not appropriate to undertake statistical analysis of this data. Therefore, the results were presented descriptively in summary tables.

3.6 Stage 2: Exploratory trial - Feasibility and pilot testing the intervention

The methodology adopted in the exploratory randomised controlled trial used to assess the feasibility, acceptability and effect size of the early years’ nutrition intervention (Cherry: Choosing Healthy Eating when Really Young) will now be described.

3.6.1 Sample
3.6.1.1 Randomisation and selection of children’s centres
Children’s centres in both study locations were randomly selected to participate in the study. More children’s centres were selected in Cornwall to represent its larger geographical area and population size. In Islington, six children’s centres were randomly selected from those centres who expressed an interest in participating in the study (9 out of 16). In Cornwall, the random selection was stratified by geographical location and deprivation to ensure representativeness of the county. Thirty main centres were willing to participate in Cornwall out of a total number of 49. Fourteen children’s centres were then selected from those who expressed an interest in participating in the study. The 14 selected children’s centres in Cornwall were then randomly assigned to intervention or control group. Three intervention and 3 control centres in Islington, and 4 intervention and 4 control centres in Cornwall. A further 2 centres (1 intervention and 1 control) were randomly selected in Cornwall using the same randomisation methodology six months later to ensure that sufficient parents could be recruited. In Islington, no further centres were recruited as there were fewer interested centres in the borough, but as each centre had a larger population of users, there were more opportunities to recruit additional parents from the centres already selected.
3.6.1.2 Recruitment of subjects

Parents were recruited using a variety of different approaches to maximise uptake. Researchers initially provided induction sessions at the children’s centres, during which they explained the project fully and asked staff to identify suitable families. Local health visiting teams and other outreach staff were also asked to refer families to the study. Researchers regularly attended outreach sessions at children’s centres and other local childcare settings (such as community groups, primary schools and private nurseries) to meet suitable families. The researcher gave a brief explanation of the study, assessed eligibility and invited parents to take part. Eligible parents registered their details and were then followed up with a telephone call from the research team to arrange their initial home visit.

In addition to face-to-face recruitment, adverts were also placed in local newspapers, and schools, libraries and doctors’ surgeries were asked to display recruitment posters. Fliers were distributed by post to families who were registered with children’s centres. Social networking sites were also used to increase awareness of the project.

Finally, communication technology was also used as a recruitment tool. Adverts for the project included a ‘short-code’, a 5-digit number to which parents could text ‘CHERRY’ to register their interest. They immediately received an automated acknowledgement message. All participants who registered their interest by this method were telephoned by the research team within 24 hours in order to explain the intervention more fully and assess their eligibility to participate. All parents that took part signed a consent form (see appendix 12) and were offered a £10 high street voucher and a cook book developed for families with young children on completing the follow-up assessment after six months.

3.6.1.3 Sample size

For exploratory trials it is inappropriate to undertake a detailed power calculation as one of the main purposes behind conducting a pilot study is to assess practicality and acceptability of the trial methods and to provide an effect size and intra cluster correlation coefficient to inform power calculations for a future definitive trial (Medical Research Council, 2008). However, based upon pragmatic considerations it was estimated that in each children’s centre there would be approximately 50 possible participants. Assuming 60% of parents invited to participate accepted the offer, and that at the 6 months follow-up there would be a 75% retention rate, a sample of 360 subjects would be needed at baseline. This target sample was very similar to a successful primary care nutrition intervention which had a sample size of 258 families at follow-up (129 per arm) (Ashfield-Watt, 2007). That trial was designed to have at least 80% power at the 5% significance level, in order to detect an increase of 0.7 portions of fruit and vegetables per day (standard deviation 2.0).

3.6.1.4 Inclusion and exclusion criteria

Parents were recruited into the study over five recruitment waves between September 2010 and November 2011, each wave lasting approximately four weeks. Parents were eligible for inclusion if:

- they had at least one child aged between 18 months and five years of age at the time of recruitment.

For parents with more than one child in this age range, the youngest child was chosen for assessment. Parents were excluded from participation if:
• their child had a diagnosed medical condition which affected their diet, for example food allergies or diabetes
• they were not able to communicate effectively in English.

3.6.2 Outcome measures
3.6.2.1 Primary outcomes
The primary outcome was the child’s fruit and vegetable consumption at home. This was defined as the total weight (grams) of fruit and vegetables consumed; the number of different types of fruit and vegetables consumed; the actual types of fruit and vegetables consumed. As there is no defined children’s portion size for fruit and vegetables from the Department of Health, the number of portions per day was calculated based on guidance that one child’s portion weighs 40 grams (Nelson, 1997). The number of children eating ‘Five a Day’ was also calculated (never, sometimes, always); children must have eaten at least 200g of fruit and vegetables (with fresh, frozen, pulses, dried and juice all counting) with a maximum of 75g from pure fruit juice and 20g from dried fruit). This is half the defined adults portion sizes and target of at least 400g fruit and vegetables a day.

3.6.2.2 Secondary outcomes
The secondary outcome was the child’s soft drink consumption. This was defined as the total quantity (ml) of soft drinks consumed; the number of occasions soft drinks were consumed; the types of soft drinks consumed; the quantity (ml) of each type, and constant access to a sugary drink (yes/no). Sugary drinks and artificially sweetened drinks were considered separately. Sugary drinks included fruit juice (only if not consumed with a meal), soft drinks containing sugar (squash and fizzy drinks) and hot drinks containing sugar.

3.6.2.3 Additional dietary outcomes
An additional outcome was the child’s consumption of sugary foods. This was defined as the number of occasions sugary snacks were consumed (snacks defined as >30 minutes after a meal); the types of sugary snacks consumed (e.g. cakes, sweets, chocolate); the number of sugary snacks in each category.

3.6.2.4 Parental additional outcomes
Additional outcomes related to the parent’s diet were consistent with the child’s outcomes, namely the consumption of fruit and vegetables, soft drinks and sugary foods. These were defined as the total weight (grams) of fruit and vegetables consumed, the number of different types of fruit and vegetables consumed; the types and quantities (ml) of soft drinks consumed; the number of portions of sugary foods consumed (based on standard portions e.g. one slice of cake, one standard size chocolate bar, two biscuits etc.), regardless of whether it was with a meal or as a snack.

Other parental outcomes thought to influence the way parents feed their young children included food knowledge, food confidence, nutrition self-efficacy, food involvement and parental stress; parental perception of child food fussiness was also included.

3.6.3 Measurement methods
Baseline assessment for the intervention groups was completed two to four weeks (depending on school holidays) before the families started attending the Cherry sessions. While the intervention group was attending Cherry, baseline assessment for the control group was completed. This was done in five phases between October 2010 and November 2011. Follow-up assessment was completed six months after the families finished attending the Cherry sessions (intervention groups) or six months after baseline (control groups). This was also done in five phases between June 2011 and June 2012.

At each time-point, the data collection involved one home visit and three telephone calls. When it was not possible to arrange a home visit, the researchers either arranged to meet the parent somewhere more convenient (for example their local children’s centre) or completed the data collection by phone after sending parents the relevant paperwork.

3.6.4 Strategies to maximise follow up
In order to minimise loss to follow up, parents were sent reminder cards at 3 months after baseline, explaining that they would be contacted again in 3 months’ time. Cards for intervention parents also included an additional insert with facts on healthy eating which aimed to reinforce the key messages of Cherry. At follow up, parents who did not respond to phone calls were sent a reminder by text message and asked to call the researchers back. If the text message was unsuccessful, a subsequent letter was sent to parents inviting them to respond.

3.6.5 Data collection methods
3.6.5.1 24 hour recalls
The child’s diet was assessed using the multiple-pass 24 hour recall method (see appendix 10). As the children concerned were under five years of age, the parents completed the interviews on their behalf. They were asked by the researcher exactly what their child ate and drank the previous day. The standard protocol from the Low Income Diet and Nutrition Survey (LIDNS) was followed, which specifies four 24 hour dietary recalls on random days (including at least one weekend day) within a 10 day period (Nelson et al. 2007). The LIDNS team compared the effectiveness and acceptability of four dietary survey methods (multiple-pass 24-hour recall, food checklist and semi-weighed method and 4-day weighed inventory) and concluded that four multiple pass 24 hour recalls were the best method for measuring diet in low-income households (Holmes et al. 2008).

A portion size booklet was given out to all parents at the home visit and baseline and then again at follow up. It was compiled using photographs provided by the Caroline Walker Trust, illustrating recommended portion sizes for pre-school children. Parents were also asked to describe portion sizes using household measures or actual measures where possible. On days when children had been cared for by someone else, parents were asked in advance to find out as much detail as possible about what the child consumed. Where possible, recalls were scheduled on days when parents had been with children the previous day.

During the home visits (one at baseline and one at follow up), parents were asked to respond to the first 24 hour recall interview of four. After this, as the interview style was familiar to the parent, phone calls were arranged to complete the remaining three 24 hour dietary recalls.

3.6.5.2 Parental questionnaire
Parents were also asked to complete a short questionnaire during the home visits (one at baseline and one at follow up) (see appendix 11 and 13a & 13b). The questionnaire was developed using validated
items from existing measures wherever possible. The questionnaire was piloted to assess its acceptability and feasibility with parents in Cornwall (n=14) and Islington (n=6) and was modified accordingly. The main sections of the questionnaire are now described.

**A: Socio demographic**
Parents were asked for information about themselves and their family, including date of birth, sex, marital status, ethnic group, employment status, benefits received, educational attainment, number of children living with them, children’s ages, and the frequency and use of children’s centre services.

**B: Parent’s diet**
Parents were asked what they had to eat and drink the previous day (24 hour recall structure) for specific categories of interest – fruit and vegetables, soft drinks and sugary foods. The researchers prompted for details about the foods and drinks, including names, brands and amounts consumed. Other questionnaires have also attempted to replicate the 24 hour recall method, for example the Five-a-day Community Evaluation Tool (FACET), which was compared with food diary estimates and considered suitable for ranking fruit and vegetable intakes and possibly for estimating changes in fruit and vegetable intakes (Ashfield-Watt 2007). However, this tool asked respondents the number of portions consumed (without defining portion sizes) rather than asking for specific quantities. We developed our own open questions focussing on the food groups of interest to the study.

**C: Food knowledge**
Parents were asked six questions relating to healthy eating advice for children under five. The first question in this section (how many portions of fruit and vegetables per day are health professionals advising children to eat?) was modified from the FACET questionnaire (Ashfield-Watt 2007). The other questions were created by the research team to reflect key aspects of the intervention:
- tinned fruit is a good source of vitamin C;
- frozen vegetables do not contain as many nutrients as fresh vegetables;
- the first ingredient listed on a food label is the one present in the largest quantity;
- children may need to try a new food up to ten times before they like it;
- the best drinks for children under five are milk and water.

The options were true, false or don’t know. The food knowledge score was calculated from the number of correct answers given (possible range 0-6).

**D: Food confidence**
The four questions on food confidence were modified from questionnaires used to evaluate previous nutrition and cooking interventions, which have been tested for validity and reliability (Barton et al. 2011; Watt et al. 2006a; Wrieden et al. 2007). Parents were asked how confident they felt about:
- being able to cook from basic ingredients;
- following a simple recipe;
- introducing new foods to their child under 5;
- knowing what foods are good for their child.

A five-point scale was used (1 = not at all confident; 5 = extremely confident) to be consistent with subsequent sections of the questionnaire. The remaining sections of the questionnaire were compiled using scales developed by other research teams and used in previous studies. The food confidence score was calculated from the total of the 4 answers given (possible range 4-20).

**E: Nutrition Self-Efficacy**
General health-related self-efficacy scales have been used to identify predictors of changes in diet, exercise and weight (Annesi 2011; Stark 2011). No studies were found that had used the Nutrition Self-Efficacy Scale, but during its development it was shown to have good test-retest reliability and internal consistency (Schwarzer and Renner 2009).

This scale was chosen because the statements relate to ability to maintain healthy eating habits. Parents were asked how certain they were about the following five statements: I can manage to stick to healthful foods:

- even if I need a long time to develop the necessary routines;
- even if I have to try several times until it works;
- even if I have to rethink my entire way of eating;
- even if I do not receive a great deal of support from others when making my first attempts;
- even if I have to make a detailed plan.

Parents chose their answers from a four-point scale (1 = very uncertain; 2 = rather uncertain; 3 = rather certain; 4 = very certain). The self-efficacy score was calculated from the total of the 5 answers given (possible range 5-20).

### F: Food Involvement

The Food Involvement Scale has been used previously with women in the UK to examine the relationships between educational attainment, food involvement and fruit and vegetable consumption (Barker et al. 2008). It includes 12 statements relating to:

- food acquisition (e.g. I do most or all of the food shopping),
- preparation (e.g. I do not like to mix or chop food),
- cooking (e.g. I enjoy cooking for others and myself),
- eating (e.g. when I eat out, I don’t think or talk much about how the food tastes);
- disposal (e.g. I do most or all of the cleaning up after eating).

It has been shown to have good test-retest reliability and internal consistency (Bell and Marshall 2003) and therefore the scale was used unaltered. Parents chose their answers from a five-point Likert scale (1 = disagree strongly; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = agree strongly). The food involvement score was calculated from the total of the 12 answers given (possible range 12-60). For some questions which were worded negatively (e.g. when I eat out, I don’t think or talk much about how the food tastes), the numbers were reversed and added to the total accordingly.

### G: Food Fussiness

The Food Fussiness Scale is a sub-scale of the Child Eating Behaviour Questionnaire, which was developed and validated with families with young children in the UK (Wardle et al. 2001). The sub-scales are designed to be used and analysed separately or together (Parkinson 2010):

- my child refuses new foods at first;
- my child enjoys tasting new foods;
- my child enjoys a wide variety of foods;
- my child is difficult to please with meals;
- my child is interested in tasting food s/he hasn’t tasted before;
- my child decides s/he doesn’t like a food even without tasting it.

Again, parents chose their answers from a five-point scale (1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = always). Food fussiness score was calculated from the total of the 6 answers given (possible range 6-30). For questions which were worded negatively (e.g. my child is difficult to please with foods), the numbers were reversed and added to the total accordingly.
Three questions were added (but not included in the total score): does your child eat the same food as the family? (using the same five-point scale); what does your child usually drink from? (multiple options listed to choose from); does he/she have a baby’s bottle at all these days, even just to go to bed with? (yes/no). These questions were modified from a previous study (Watt et al. 2006a) and were considered important in relation to the aims of the intervention.

H: Parenting stress
Selected items from the Parenting Stress Index (101 items) (Abidin 1995) have been used in previous studies to examine relationships between parenting stress and early childhood caries (Finlayson et al. 2007; Quinonez 2001; Tang et al. 2005). The following statements were used:

- I feel that I have too little time by myself;
- I wish I did not have so many responsibilities;
- my child gets on my nerves;
- my child makes too many demands;
- I feel that I am not as good a parent as I could be;
- I feel that being a parent is much more work than pleasure;
- I am doing everything I can to give my child a good life;
- I feel tired from raising a family.

Again, parents chose their answers from a five-point scale (1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = always). Parental stress score was calculated from the total of the 8 answers given (possible range 8-40). For some questions which were worded positively (e.g. I am doing everything I can to give my child a good life), the numbers were reversed and added to the total accordingly.

3.6.6 Quality Assurance

3.6.6.1 Data collection
Due to the large quantity of 24hr recalls that were conducted, 14 volunteers were recruited throughout the study to assist (8 in Islington and 6 in Cornwall). All volunteers who completed recalls were given the same standardised training and a script to follow for all recalls. A member of the research team checked the first 5 recalls completed by each volunteer to ensure consistency and high quality throughout the data collection phase.

3.6.6.2 Data handling
A protocol for the coding of all data was agreed with the research team. A small sample of 24hr recalls and questionnaires were coded to test the protocol worked. Any discrepancies and omissions were then resolved prior to undertaking the remainder.

A: 24hr recalls
Coding of key dietary outcomes was completed on the original paper copies. Dietary data were then entered into Excel. To maintain consistency, one researcher completed all of the coding and data entry for the 24hr recalls. Five per cent of all recalls were then checked by a second researcher and any inconsistencies and issues resolved.

B: Parental questionnaires
One member of the research team coded all of the non-dietary data and entered it into Excel. The dietary data were coded by the same researcher as the 24hr recalls to maintain consistency.
cent of all questionnaires were checked by a second researcher and any inconsistencies and issues resolved.

C: Data analysis
Once coded and entered, the data were cleaned thoroughly to remove any mistakes and missing data. All statistical analysis was conducted by one person, using the same dataset to minimise the chance of error.

3.7 Process evaluation
As highlighted by MRC guidance (Medical Research Council 2008), an essential component of an exploratory randomised controlled trial is the process evaluation to assess how the intervention was delivered, differences in delivery between the two sites, its acceptability to key stakeholders. Process evaluation data were collected through a variety of ways. During the delivery of the Cherry sessions in the intervention children’s centres, participants and the Cherry tutors were asked to give their feedback at the end of each session. Parents were asked whether they had enjoyed the sessions and what they felt they had learnt using a simple method of giving feedback without having to write anything (to be inclusive of parents with poor literacy). Parents from the intervention group were also asked their views of the intervention in the six month follow up questionnaire, including which bits they had found most and least useful, what dietary changes they had made as a result of Cherry and the reasons they had for missing any sessions (see appendix 13a, questions 59-70). Both quantitative and qualitative data were collected as part of this section of the process evaluation.

In addition, semi-structured telephone interviews were conducted with a purposively selected sample of individuals (n=11) from both Islington and Cornwall including Cherry trainers, parents who attended Cherry, children’s centre staff and the main researchers involved in collecting data and supporting the study. These interviews explored views on the nature of the intervention, its delivery and its potential impact. Discussions also focused on what were considered the positive features of the intervention, as well as any problems that occurred in its delivery and implementation. Finally recommendations on how to improve and develop the intervention were also considered.

3.8 Outcome data analysis
Data were entered into Stata™ (version 12) statistical software. Descriptive analyses were used to describe the social and demographic characteristics of study participants and their families as well as food consumption characteristics of the participants. Independent t-tests (or non-parametric equivalent methods) were used to assess difference in primary outcome (fruit and vegetables consumption measured in g/day) between the intervention and control groups at baseline. Similar analysis was conducted for other secondary, continuous outcomes such as child’s consumption of sugary drinks measured in ml/day. Paired t-tests were used to assess changes in outcomes from baseline to follow-up. Regression modelling was used to assess differences in changes in outcomes from baseline to follow-up between the groups accounting for differences in baseline characteristics of study participants and their families. Longitudinal data were analysed using (a) standard linear regression, (b) multilevel regression techniques taking into account potential clustering of individuals within children’s centres. Effect modifiers such as gender or geographical location (Islington/Cornwall) were tested in regression models. For non-continuous secondary outcomes, logistic regression was used in
the appropriate steps of the analysis. All analysis was conducted on an intention to treat basis. A significance level of 0.05 was used in the analysis.

All dietary data was included in the analysis, regardless of the number of recalls each participant had completed. Aggregated values for children’s dietary data were used throughout the analysis. All available dietary recalls (4 or fewer) were averaged into one mean value at baseline and at follow up; this was appropriate as there was no significant variability in primary and secondary outcomes found according to the number of recalls collected.

Intra-cluster correlation (ICC) was estimated for the primary and secondary outcomes and potential sample sizes were estimated based on the data from this project for any future full-scale intervention studies.

Results for the main analysis are reported using classical regression techniques, and examples are provided for multilevel modelling. This is because (a) all ICC coefficients were low or very low (see 6.5.1) and all 95% CI for ICC included 0.00 values (showing no clustering).

3.9 The Cherry programme
3.9.1 Overview of development process

The Cherry programme was developed by the research team between June 2009 and August 2010 based upon the data gathered in the initial exploratory stage of the study. It was a family-centred nutrition intervention delivered in selected children’s centres across Islington and Cornwall. The programme focused on healthy eating for under-fives and their families and involved a mixture of learning, discussion and practical ‘cook and eat’ activities. The training of children’s centre staff and support with developing food policies in centres was also a key component of the intervention.

Informed by the earlier stages of the study, and in particular the qualitative and quantitative data gathered from parents (Hayter et al. 2012; Ohly et al. 2012), the focus of Cherry was on making simple changes to improve the food that young children and their families eat. Specifically, it aimed to increase fruit and vegetables and to decrease the amount of sugary drinks and snacks consumed by young children. It also aimed to help parents gain confidence around food, increase their food involvement and their own consumption of fruit and vegetables.

3.9.2 Identifying the evidence base

A detailed and comprehensive review of the relevant UK and international nutrition, health promotion and behaviour change literature was undertaken to assess the evidence base for the intervention. Particular focus was placed upon interventions targeting preschool children and those delivered in early years settings. Both systematic reviews and empirical studies were included in the review. In addition, a review was also undertaken of studies which had assessed the factors influencing dietary patterns of families with preschool children and barriers preventing the adoption of recommended feeding practices.

3.9.3 Theoretical development of the intervention - Selecting a theory base
It is now increasingly recommended, not only by the MRC guidance, but also by other reports that theory should be used in the design and evaluation of public health interventions (Medical Research Council, 2008; Medical Research Council, 2000; National Institute for Health and Clinical Excellence, 2007). It is argued that an intervention based on relevant theory rather than just a pragmatic approach is more likely to be effective (Medical Research Council 2008). Theory should also be used to provide a rationale for how an intervention will achieve the desired changes. In the context of this study, two levels of change were anticipated (at the individual level and also institutional i.e. the children’s centres) requiring a wider theoretical perspective.

However, despite this growing emphasis on the use of theory in developing interventions, there is little practical guidance on just how to select an appropriate theory. For instance, the MRC recommends using an appropriate theory with little explanation of what this means (Medical Research Council, 2008); NICE similarly recommends choosing a “relevant behavioural model” (with a further complication here in that the terms theory and model are sometimes used interchangeably) (National Institute for Health and Clinical Excellence, 2007). The philosopher John Dewey noted back in 1916, the means by which particular theories are selected and used, often remains in the “twilight zone of enquiry” (Dewey 1916). We therefore, wished to formulate an explicit and transparent procedure by which we carried out the identification of appropriate theories to inform the development of the early years’ nutrition intervention.

Information gathered from the earlier stages of the study provided useful background to inform the selection of the theory base. In particular, critically reviewing recent systematic reviews of the behaviour change literature helped to identify common findings on the theoretical basis of interventions. From this, we then put together a composite approach drawing on Carpiano and Daley’s (Carpiano and Daley 2006) recommendations in using and building theory in the context of public health, supplemented by guidance from NICE (National Institute for Health and Clinical Excellence, 2007) and the GSR review (Darnton 2008), both of which set out a structured approach to developing interventions for behaviour change. Carpiano and Daley outline a three-stage approach to using theory that we then followed with modification:

1. **Define a conceptual framework to identify the variables and the broad relations between them that account for the phenomenon of interest.**
   This is equivalent to the NICE guidance and the ANGELO approach that involves mapping the problem or issue to be assessed and where the best options for intervention might lie (National Institute for Health and Clinical Excellence 2007; Swinburn et al. 1999).

2. **Select and define relevant theories to provide a more dense and coherent set of relationships between the key variables of interest.**
   To do this and to identify specific causal factors, the baseline qualitative and quantitative data were used to identify the key influencing factors and also those that could be addressed in the context of intervention.

3. **Finally develop a logic model that is more specific still and that predicates specific assumptions about a limited set of outcomes**

Finally, based upon the essential criteria of relevance and effectiveness (Taylor et al. 2006), we selected two theories, the social cognitive theory (Bandura 1986) to inform the individual behaviour change components of the intervention and the stage theory of organisational change for the institutional element (Kaluzny and Hernandez 1988). The social cognitive theory highlights the
importance of self-efficacy in behaviour change. The qualitative data collected in the focus groups stressed that parents were largely well informed on dietary recommendations but often lacked the skills and confidence to adopt practically these measures in their busy and hectic lives (Hayter et al., 2012). The stage theory of organisational change, based on Rogers' Theory of Innovation (Rogers 1983), describes how organisations pass through a series of steps in the process of implementing innovation and change. Again, both the qualitative and quantitative data collected from children’s centre staff highlighted the importance of policy guidance, staff training and engagement with parents as key issues in promoting change in nutrition practices within the children’s centres (Hayter et al. 2012; Ohly et al. 2012).

3.9.4 Development of a logic model to inform the intervention

The final step in the development phase was the creation of a logic model, based upon the data and knowledge gathered in the previous steps which diagrammatically mapped out the inputs, outputs and expected outcomes for the planned intervention (McLaughlin and Jordan 1999). Figure 3b presents a summary of the key elements of the logic model.

![Figure 3b Logic model of the planned intervention](image)

3.9.5 Delivery of the intervention

Cherry was delivered by trained tutors to 8 groups of families in Islington and 12 groups in Cornwall between October 2010 and November 2011, with an average of 8 (and between 5-12) families attending each group. Tutors were selected according to their ability to successfully deliver the Cherry
programme; they were then trained to deliver the programme during a one-day intensive training course which all tutors attended. The research team monitored the tutors for consistency and quality of delivery by attending sessions at random throughout the course of the project. At each session, a member of staff from the children’s centre (and/or sometimes one of the research team) was present to provide support to the tutor as required. The delivery was standardised as much as practically possible between groups; however there were some differences depending on the needs of each group, for example the recipes prepared and the focus of discussions. Tutors were given a trainer guide which provided them with the information required to run the sessions, including sheets to be photocopied and given to parents (see appendices 14a & 14b).

The intervention group participants attended 4 sessions (one each week) over four weeks. Each session lasted two hours. The first hour of each session involved parents discussing and learning about a variety of aspects of healthy eating while the children attended a free crèche in the adjacent room (the crèche activities were not considered part of Cherry and were not monitored). The second hour involved parents and children together for a more practical, ‘hands on’ cook and eat session involving basic food preparation and tasting. Each session began with a recap from the previous week and finished with parents being given a ‘Cherry at Home’ activity to complete before the following week’s session; these were both designed to consolidate parents’ learning. The intervention group also received SMS reminders via mobile phones between sessions; SMSs included the main messages of the Cherry programme, as well as reminders to attend each session. Figure 3c summarises the content of the course in more detail.
<table>
<thead>
<tr>
<th>Theory</th>
<th>Cook &amp; Eat</th>
<th>‘Cherry at Home’</th>
<th>Learning outcomes</th>
</tr>
</thead>
</table>
| WEEK 1  
Family friendly food | Introduction to the Cherry programme and course overview | A tasting session to introduce the idea of children trying new foods | Goal setting: Parents choose a healthy eating goal for the child, themselves or the whole family to do over the week | To understand the importance of healthy eating for under fives |
| | Why eating well matters | Includes a wide variety of fresh, tinned and dried fruits and vegetables | | To understand the Eatwell plate and how to use it |
| | The Eatwell plate | | | To identify what parents would like to get out of the programme |
| | A look at food labels | | | |
| | Engaging parents with handling and tasting food | | | |
| WEEK 2  
Introducing new foods (Overcoming fussy eating) | How to deal with food refusal | An introduction to preparing easy meals which are quick to make and well-balanced. | Introducing new foods with the Tiny Tastes™ chart | To enable parents to handle food refusal effectively |
| | How to introduce new foods to children | | | To encourage parents to introduce new foods to their children |
| | Why young children need regular snacks and the difference between grazing and snacking | How to make healthy versions of common snack foods, to be eaten as part of a ‘mini-meal’. | Have a go at introducing new healthy snacks and drinks at home | |
| | Introducing the concept of ‘mini-meals’: healthy, affordable snack ideas for children | Continue using the Tiny Tastes™ chart | To expand parents’ repertoires of healthy, affordable options | |
| | The best drinks for under-fives, the sugar content of common drinks & the effect of drinking them | | To encourage parents to provide healthier snacks and drinks (with a focus on increasing fruit & vegetables and reducing sugar) | |
| | | | To increase awareness of food labels and the sugar content of popular drinks | |
| WEEK 3  
Healthy snacks & drinks for children | How to make cheaper choices for fruits and vegetables | Preparation of recipes that are appropriate for a low budget: a whole meal (main course and dessert) | To continue to put the Cherry principles into practice at home | |
| | How to shop for food, to plan ahead and make meal plans | | To make healthy eating seem more achievable for parents on a low income | |
| | Tips for shopping on a budget, including buying in bulk, internet shopping etc. | | To give parents the confidence to continue to put the Cherry principles into practice | |

Figure 3c Outline of the Cherry course
3.9.6 Other components of the intervention

A major limitation of many interventions is the failure to focus on improving the social environment which has a profound influence in supporting and maintaining individual behaviour change (Glannz et al. 2005; National Institute for Health and Clinical Excellence 2007). Therefore the intervention comprised not only individually-focused nutrition support, but also encompassed activities directed at developing the capacity of the children’s centre to promote and maintain healthy nutritional practices. In the intervention centres, a staff training session was offered to all staff working in the centres. The training session, which included an introduction and overview of the Cherry programme, covered various aspects of healthy eating and nutrition for early years (see appendix 1). Each training session was tailored to the needs of the staff, as identified by heads of each intervention centre. Centre heads were asked to invite as many staff as they felt would benefit, including (but not limited to): nursery workers, health professionals, receptionists, management staff, cooks, support staff, outreach staff (e.g. family support workers).

Intervention centres were also given support and advice to revise and develop their centre’s food policies in order to support healthy eating practices within the centre. Members of the research team consulted with centre heads to complete an audit of existing policies, supported consultations on the revised policy amongst centre staff should contain and gave additional support where required.

3.9.7 Control group

The children’s centres randomised to the control group did not receive any of the components of the Cherry programme. During the study period, the control centres agreed (with an informal ‘contract’) not to implement any new nutritional interventions but continued with existing support (see appendix 16a and 16b for letters of agreement for both control and intervention centres). At the end of the study period, all control centres received £100 worth of high street vouchers to support them in the future delivery of nutrition and healthy eating activities. A set of the resources from the Cherry programme were also shared with these centres.

3.9.8 Intervention collaboration

3.9.8.1 Multidisciplinary research team

A multidisciplinary research steering group was established at the beginning of the study which continued to meet at regular intervals throughout the course of the project to discuss progress, make decisions and contribute towards papers for publication. Members included academics from a number of universities and different disciplines with expertise in nutrition, dental public health, health psychology, trial methodology, statistics, and quantitative and qualitative research methods.

3.9.8.2 Local steering groups

In both locations, local steering groups were established in order to

- give advice and comment on the conduct and content of the project
- give advice on potential acceptability of project, with particular reference to the nature of the intervention
- comment on the appropriateness and acceptability of measurement tools
• help with local implementation, and engagement with parents and local users of Children's Centres
• give feedback from other local stakeholders and partners
• provide overall user accountability for project planning

In Cornwall, the steering group consisted of 4 members of the research team and 9 others, including members of Cornwall Council, the Health Promotion Service and the Royal Cornwall Hospitals NHS Trust. In Islington, the steering group was formed as part of the Healthy Children’s Centre group, a pre-established group which regular meetings once per academic term. Members similarly included a member of the research term, staff from NHS Islington and Islington Council.

3.9.8.3 Mobile technology – the ‘AIA8’ system
The Cherry programme used a mobile communication system (AIA8) provided by the UCL Centre for Health Informatics & Multiprofessional Education throughout the data collection and intervention stage. Text messages were sent to arrange and confirm data collection appointment times, for parents to register interest in joining Cherry, to send reminders to attend Cherry sessions and to enforce learning of the key messages between sessions.

3.9.8.4 Tiny Tastes – a tool to support parents with fussy eating
A key component of the Cherry programme was focused on supporting parents to overcome fussy eating. At the second week of Cherry, parents were given a copy of the Tiny Tastes™ pack, a tool designed to support parents with introducing new vegetables and fruits to young children to try and encourage them to eat new foods. Tiny Tastes was produced by members of UCL (Health Behaviour Research Centre, funded by the British Heart Foundation) and piloted with the Cherry parents. Some questions evaluating the success of the Tiny Tastes pack was included in the process evaluation and follow up questionnaire and used to develop further the resource pack.

3.10 Summary
This chapter has provided a detailed overview of the study methodology. The next chapter will provide a summary of the results from the development stage, the baseline characteristics of the trial sample, including differences between the two study sites and intervention and control groups, and primary and secondary outcomes at baseline.
Chapter 4 – Results: Development phase and baseline characteristics of trial sample

4.1 Introduction

This chapter will initially present the findings from the exploratory development phase of the study. As two scientific papers describing the results of the qualitative and quantitative exploratory research with parents have now been published (Hayter et al., 2012; Ohly et al., 2012), only a brief overview of these findings will be presented. A summary of the results from the questionnaire survey with children’s centre staff will also be presented.

The baseline characteristics of the trial sample will then be described. Demographic details of the sample will be outlined, followed by a description of the baseline primary and secondary outcomes by intervention and control group, and by location, where appropriate.

4.2 Development phase

4.2.1 Focus groups with parents and children’s centre staff

Four focus groups (two with parents and two with staff) were conducted in each of the two locations, Cornwall and Islington. There were also four individual interviews with parents in Cornwall. In total, 39 parents and 24 members of staff took part in the exploratory focus groups.

Children’s centre staff considered many of the families who use their services to have poor diets. They discussed excessive snacking patterns, lack of healthy meals and excessive consumption of fizzy drinks as being common problems. They felt that the cost of food was a major barrier to healthy eating for many families, but also lack of confidence and limited cooking skills. Although most children’s centres provided healthy food and snacks for families, most did not enforce a strict food policy when it came to what parents and children could bring into the centres. Some members of staff said they wanted to be able to support families more and felt that healthy eating was a neglected topic. A broad and diverse range of food related activities were reported to be taking place in centres but these often lacked a strategic focus and were rather fragmented and uncoordinated in nature. Very limited evaluation had been undertaken of previous nutrition programmes. When discussion focused on ideas for the Cherry programme, staff were broadly supportive of the planned intervention, in particular the proposed focus on food preparation and cooking activities, food labels and budgeting. They favoured short courses that did not require a major commitment from parents as they reported some existing courses were run over a 12-week period and very few parents attended all these sessions. They emphasised the difficulty of engaging parents, especially those deemed ‘at risk’ and stressed the importance of early engagement, flexibility and outreach work in the community. Home-based support was discussed and opinions were very mixed about whether this would be successful or not. Children’s centres were generally keen to be involved with the delivery of the planned intervention, but expressed some concerns about staff capacity and training needs.

In the focus groups and individual interviews with parents a range of interesting issues were highlighted that informed the development of the Cherry intervention (Hayter et al. 2012). Parents expressed concerns about their children’s diets, particularly fussy eating habits and food refusal. A wide range of factors were reported to influence their food choice decisions, including practical considerations (cost of food, time constraints, lack of skills and confidence) and social/familial
influences (cultural beliefs/practices, conflict between family members, role models). Some parents had received healthy eating support from the children’s centres and health professionals, and had found this to be helpful. However, other parents valued non-professional support from friends more highly. The parents interviewed in their homes in Cornwall were not children’s centre users (despite living close by) and described feelings of social isolation which prevented them from seeking or accepting support.

When options for the intervention were discussed in the focus groups and interviews, parents were especially keen to include cooking activities, recipe ideas, advice on food budgeting, and ways to overcome fussy eating. They suggested various ways to engage parents most in need of support, including flexible timing of sessions, free crèche provision, short courses and drop-ins, community outreach, free transport, provision of refreshments, opportunity to take home the food prepared, and incentives for parents (e.g. vouchers) and children (e.g. stickers). The male participants requested that any recruitment activities and branding should be inclusive of fathers, as well as mothers. As with the staff, parents expressed very mixed views about the idea of home-based support. Some felt this would be helpful as it would engage with some parents, but others would not like the idea as it was felt to be too intrusive.

4.2.2 Questionnaire survey with parents

Following the focus groups, a questionnaire survey was undertaken with a sample of parents in both study areas to assess their experiences of feeding a young child and their views on developing a nutrition intervention in children’s centres (Ohly et al. 2012). The parental questionnaire was completed by 261 parents, 160 in Cornwall and 101 in Islington. This represents 57% of the questionnaires distributed, but as some were given to children’s centre staff and may not have reached parents, the true response rate is likely to be higher. Most of the respondents were female (94.2%). There were some differences between respondents in Cornwall and Islington; parents in Cornwall were younger, more likely to be married or cohabiting, more likely to be White and less likely to be working full-time (all p<0.01).

The questionnaire provided a broad indication of children’s eating and drinking habits by asking about fruits, vegetables and snacks eaten the previous day, preferred types of drinks, and family eating patterns (such as eating together as a family, use of fresh ingredients vs. ready meals etc). On average, children’s fruit and vegetable consumption was reported as below the recommended 5-a-day. Children’s fruit and vegetable consumption increased with parents’ level of education (p=0.04). Over half of parents said they would like their child to eat more fruits and vegetables. The most common reason given why children did not eat more fruit and vegetables was because they disliked them.

The most important factors influencing parents’ food choices were how healthy the foods were, the taste of food, their freshness and the overall quality of food. Less educated parents placed greater emphasis on the familiarity of food to the child, food being liked by the whole family, and affordability of foods. In contrast the more highly educated parents considered the freshness and quality of food to be more important. Over a third of parents (38%) reported they would like more advice/support to help their child to eat well. The most popular options included:

- recipe ideas for children (75%)
- practical ways to encourage children to eat well (60%)
- overcoming fussy eating (59%)
• introducing new foods (54%)
• food and play – ways to make food fun (52%)
• examples of healthy snacks for children (52%)
• appropriate portion sizes for children (50%).

The least popular option was home-based support for parents with only 16% of the sample identifying this as a useful option. Several of the intervention options were considered more useful by parents with lower educational attainment. These included what a healthy diet means; how to understand food labels; budgeting for food; examples of healthy food and snacks; and portion sizes.

4.2.3 Questionnaire survey with children’s centre managers

The final element of the exploratory phase involved conducting a questionnaire survey with children centre managers to determine the nature of food/drink provision, types of food based activities delivered in centres, and their views on the proposals for the Cherry intervention. The postal questionnaire was completed by 31 children’s centre managers, 19 in Cornwall and 12 in Islington (60% response rate).

4.2.3.1 Food and drinks provision

Provision of food and drinks varied between Islington and Cornwall because of the differences in the nature and types of services provided in the children’s centres in the two locations (table 4.2.3.1). Islington centres provide full-time childcare so it is more common for them to provide breakfast clubs and packed lunches. However, the provision of snacks (for example during morning and afternoon play sessions) and community café facilities was similar in both locations.

<table>
<thead>
<tr>
<th>Table 4.2.3.1 Provision of food services by children’s centres</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Breakfast club</td>
</tr>
<tr>
<td>Cooked or packed lunch</td>
</tr>
<tr>
<td>Snacks</td>
</tr>
<tr>
<td>Community café</td>
</tr>
</tbody>
</table>

4.2.3.2 Current food activities

The children’s centre staff reported that most centres have adequate facilities to deliver food activities and healthy eating interventions, either in the centre itself or by using nearby community outreach buildings. For example, 90% have meeting rooms, 77% have kitchens and 71% have outdoor space for growing vegetables. Some of the centres were already offering food-based activities for families and others expressed an interest in doing so in the future. For example, 52% reported that they already offered cooking sessions and a further 39% expressed a wish to start these sessions. At the time of the survey, Cornwall children’s centres provided more cooking and tasting sessions for families (table 4.2.3.2).
Table 4.2.3.2  Provision of food activities by children’s centres

<table>
<thead>
<tr>
<th></th>
<th>Islington (%)</th>
<th>Cornwall (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking sessions</td>
<td>41.7</td>
<td>57.9</td>
<td>51.6</td>
</tr>
<tr>
<td>Taster sessions for parents</td>
<td>18.2</td>
<td>55.6</td>
<td>41.4</td>
</tr>
<tr>
<td>Taster sessions for children</td>
<td>33.3</td>
<td>64.7</td>
<td>51.7</td>
</tr>
</tbody>
</table>

Over 90% of children’s centre managers said their staff already supported families with healthy eating advice, both in the centres and in the home environment. This support was provided by a variety of staff (tables 4.2.3.2a and 4.2.3.2b). It was reported that many of these individuals were overstretched in terms of their workload, and the managers expressed some concerns about staff capacity to deliver an additional nutrition intervention.

Table 4.2.3.2a  Staff providing nutrition support to families in the children’s centre

<table>
<thead>
<tr>
<th>Who delivers healthy eating advice to parents in the children’s centre?</th>
<th>Dedicated session (%)</th>
<th>Every day job (%)</th>
<th>Both (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre manager</td>
<td>0</td>
<td>25.8</td>
<td>0</td>
</tr>
<tr>
<td>Health visitor</td>
<td>16.1</td>
<td>58.1</td>
<td>9.7</td>
</tr>
<tr>
<td>Midwife</td>
<td>6.5</td>
<td>45.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Family support worker</td>
<td>6.5</td>
<td>61.3</td>
<td>9.7</td>
</tr>
<tr>
<td>Community worker</td>
<td>3.2</td>
<td>16.1</td>
<td>0</td>
</tr>
<tr>
<td>Volunteers</td>
<td>3.2</td>
<td>9.7</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.2.3.2b  Staff providing nutrition support to families in the home

<table>
<thead>
<tr>
<th>Who delivers healthy eating advice to parents in the home?</th>
<th>Regularly (%)</th>
<th>Sometimes (%)</th>
<th>Never (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health visitor</td>
<td>51.6</td>
<td>35.5</td>
<td>0</td>
</tr>
<tr>
<td>Midwife</td>
<td>29.0</td>
<td>19.4</td>
<td>0</td>
</tr>
<tr>
<td>Family support worker</td>
<td>45.2</td>
<td>41.9</td>
<td>0</td>
</tr>
<tr>
<td>Community worker</td>
<td>0</td>
<td>25.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Volunteers</td>
<td>6.5</td>
<td>0</td>
<td>19.4</td>
</tr>
</tbody>
</table>

4.2.3.3 Views on intervention components

The managers were supportive of our proposals for an intervention delivered in children’ centres, in particular food and play activities, recipe ideas and taster sessions (table 4.2.3.3). Over half of managers thought most of the components should be delivered in the home as well as the children’s centre (see both columns). Home-based support was more popular with managers in Cornwall; 94% of managers thought parents would like this in Cornwall compared to 56% in Islington. There were some concerns about insufficient crèche facilities and staff training needs. Half (54%) of the children’s centres already provided food and nutrition training for staff, but the type of training varied in terms of content and depth.
### Table 4.2.3.3 Views on suggested components of the intervention (and whether they should be delivered in the children’s centres, in the home or both)

<table>
<thead>
<tr>
<th>Component</th>
<th>Centre (%)</th>
<th>Home (%)</th>
<th>Both (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and play activities (making food fun)</td>
<td>61.3</td>
<td>3.2</td>
<td>19.4</td>
</tr>
<tr>
<td>Taster sessions for parents and children</td>
<td>58.1</td>
<td>0</td>
<td>19.4</td>
</tr>
<tr>
<td>Recipe ideas for children</td>
<td>41.9</td>
<td>0</td>
<td>38.7</td>
</tr>
<tr>
<td>Basic cooking and food preparation skills</td>
<td>32.3</td>
<td>3.2</td>
<td>54.8</td>
</tr>
<tr>
<td>Understanding food labels</td>
<td>29.0</td>
<td>0</td>
<td>38.7</td>
</tr>
<tr>
<td>Overcoming fussy eating</td>
<td>25.8</td>
<td>3.2</td>
<td>54.8</td>
</tr>
<tr>
<td>Information on healthy food and snacks</td>
<td>25.8</td>
<td>3.2</td>
<td>51.6</td>
</tr>
<tr>
<td>Budgeting for food shopping</td>
<td>22.6</td>
<td>6.5</td>
<td>51.6</td>
</tr>
<tr>
<td>Introducing new foods</td>
<td>22.6</td>
<td>3.2</td>
<td>51.6</td>
</tr>
<tr>
<td>Appropriate portion sizes for children</td>
<td>12.9</td>
<td>6.5</td>
<td>58.1</td>
</tr>
<tr>
<td>Managing different food needs within the family</td>
<td>3.2</td>
<td>19.4</td>
<td>51.6</td>
</tr>
<tr>
<td>Goal setting and motivation</td>
<td>9.7</td>
<td>6.5</td>
<td>54.8</td>
</tr>
</tbody>
</table>

Ranked according to proposed delivery in children’s centres

The managers reported that although 41% of children’s centres had an existing healthy food policy, they were reluctant (in agreement with the staff in the focus groups) to enforce it strictly by restricting certain foods from children’s centres. It was felt that this would discourage some parents from attending centre services, particularly the families that most required support and assistance.

### 4.3 Baseline characteristics of trial sample

#### 4.3.1 Recruitment details

A total of 394 parents with children aged 18 months to 5 years were recruited across Islington and Cornwall (see Figure 4a for details). The majority of the parents (96.7%) who were recruited were female with a mean age of 32.9 years.

At the start of the project, the target sample at baseline was 360 subjects to be recruited from 14 randomly selected children’s centres (6 Islington and 8 Cornwall). However towards the end of the recruitment phase due to concerns over the expected retention rate at follow-up, an additional wave of recruitment was undertaken. In Cornwall, 2 further centres (one intervention and one control) were randomly selected to take part, from which 23 parents were recruited (12 intervention and 11 control). In Islington, further recruitment was conducted at 3 of the original centres with an additional 80 parents (42 intervention and 38 control) recruited. Islington has fewer centres each with larger catchment areas than in Cornwall so it was more practical to continue using the original centres where recruitment was already established and the Cherry project well known.

It was not feasible to collect information on the number of parents who refused to take part in the study due to the varied methods of approaching potential subjects. However, all families recruited met the inclusion criteria and no families were excluded based on the exclusion criteria (dietary restrictions based on a medical condition and ability to understand English). Later, at follow up, three families were excluded due to poor English abilities (they had initially been interviewed with an interpreter).
Children’s centres invited to participate (n=65)

Willing to participate
n= 39

Randomisation of children’s centres

Control centres
n= 8

Intervention centres
n= 8

Recruitment of parents

Control
n= 195
(103 Islington/92 Cornwall)

Withdrawn during baseline = 6
(3 Islington/ 3 Cornwall)
No longer interested: 4
Language problems: 2

Lost at follow up=24
(21 Islington/ 3 Cornwall)
No longer interested: 1
Unable to contact: 19
Too busy: 3
Pregnancy: 1

Completed study
n=165 (85%) 
(77Islington/88 Cornwall)

Intervention
n= 199
(101 Islington/98 Cornwall)

Withdrawn during baseline = 19
(11 Islington/ 8 Cornwall)
No longer interested: 11
Language problems: 2
Too busy: 4
Illness/family problems: 2

Lost at follow up = 41
(20 Islington/ 21 Cornwall)
No longer interested: 3
Unable to contact: 34
Too busy: 2
Illness/family problems: 2

 Completed study
n=139 (70%)
(69 Islington/70 Cornwall)

Total followed up
n=304 (77%)

Figure 4a Consort diagram for the exploratory trial
### Demographic and family characteristics of whole sample

The majority of parents in the sample (97%) were female with a mean age of 32.9 years (SD 6.7) and were married or cohabiting (67%) (table 4.3.2). The majority of the sample described themselves as White British (65%) and just over a third (36%) were employed. Nearly three quarters of the sample (71%) were receiving benefits (excluding child benefit) and 39% were educated up to GCSE level. The mean age of the child was 28.8 months (SD 10.2) and nearly a fifth (19%) attended nursery.

<table>
<thead>
<tr>
<th>Demographic and family characteristics</th>
<th>Whole sample (n=394)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Parents age (years)</td>
<td></td>
</tr>
<tr>
<td>Child age (months)</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td></td>
</tr>
<tr>
<td>Child order (1st child)</td>
<td></td>
</tr>
<tr>
<td>Child gender (female)</td>
<td></td>
</tr>
<tr>
<td>Child attending nursery (at least one day)</td>
<td></td>
</tr>
<tr>
<td>Parent gender (female)</td>
<td></td>
</tr>
<tr>
<td>Marital status (married/cohabiting)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity (white British)</td>
<td></td>
</tr>
<tr>
<td>Employment status (working)</td>
<td></td>
</tr>
<tr>
<td>Benefits (any type received excluding child benefit)</td>
<td></td>
</tr>
<tr>
<td>Educational level obtained (none/GCSE &amp; equivalent)</td>
<td></td>
</tr>
</tbody>
</table>

### Demographic and family characteristics by location

As expected, there were some differences between the socio-demographic characteristics of parents and children in Islington and Cornwall (table 4.3.3). Parents in Islington were slightly older, had fewer children, were less likely to be married or cohabiting and were more likely to be from a minority ethnic group. Parents in Cornwall were however more likely to be receiving benefits. Children in Islington were more likely to attend nursery.
### Table 4.3.3  
**Demographic and family characteristics of sample by location**

<table>
<thead>
<tr>
<th>Demographic and family characteristics</th>
<th>Total  (n=394)</th>
<th>Islington (n=204)</th>
<th>Cornwall (n=190)</th>
<th>Difference</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents age (years)</td>
<td>32.9 (6.7)</td>
<td>33.8</td>
<td>32.0</td>
<td><strong>0.005</strong></td>
<td></td>
</tr>
<tr>
<td>Child age (months)</td>
<td>28.8 (10.2)</td>
<td>30.0</td>
<td>28.1</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>Number of children per family</td>
<td>1.83 (0.9)</td>
<td>1.74</td>
<td>1.96</td>
<td><strong>0.04</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of whole sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child order (1&lt;sup&gt;st&lt;/sup&gt; child)</td>
<td>59.1</td>
<td>61.3</td>
<td>56.8</td>
<td>0.37</td>
<td></td>
</tr>
<tr>
<td>Children attending nursery (at least one day)</td>
<td>19.0</td>
<td>28.0</td>
<td>9.5</td>
<td><strong>&lt;0.0001</strong></td>
<td></td>
</tr>
<tr>
<td>Child gender (female)</td>
<td>49.5</td>
<td>46.1</td>
<td>55.3</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>Parent gender (female)</td>
<td>96.7</td>
<td>95.6</td>
<td>97.9</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Marital status (married/cohabiting)</td>
<td>67.1</td>
<td>58.4</td>
<td>76.3</td>
<td><strong>&lt;0.0001</strong></td>
<td></td>
</tr>
<tr>
<td>Ethnicity (white British)</td>
<td>64.6</td>
<td>37.0</td>
<td>94.2</td>
<td><strong>&lt;0.0001</strong></td>
<td></td>
</tr>
<tr>
<td>Employment status (working)</td>
<td>36.1</td>
<td>37.8</td>
<td>34.4</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td>Benefits (any type received excluding child benefit)</td>
<td>72.8</td>
<td>66.2</td>
<td>80.0</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Education level obtained (none/GCSE &amp; equivalent)</td>
<td>39.0</td>
<td>39.6</td>
<td>38.4</td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>Educational level obtained (secondary)</td>
<td>18.1</td>
<td>15.6</td>
<td>20.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level obtained (university)</td>
<td>42.7</td>
<td>44.8</td>
<td>41.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4.3.4  
**Demographic and family characteristics by control and intervention groups**

The intervention and control groups were fairly well matched in terms of socio-demographic characteristics of parents and children (table 4.3.4). However, there were some significant differences; the control group had slightly older children, more children per family, more children attending nursery, more male parents, more working parents and more highly educated parents than the intervention group.
### Table 4.3.4  Demographic and family characteristics by control and intervention groups

<table>
<thead>
<tr>
<th>Demographic and family characteristics</th>
<th>Total (n=394)</th>
<th>Intervention (n=199)</th>
<th>Control (n=195)</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td>P Value</td>
</tr>
<tr>
<td>Parents age (years)</td>
<td>32.9 (6.7)</td>
<td>32.3 (6.9)</td>
<td>33.6 (6.3)</td>
<td>0.06</td>
</tr>
<tr>
<td>Child age (months)</td>
<td>28.8 (10.2)</td>
<td>27.7 (10.1)</td>
<td>30.0 (10.1)</td>
<td><strong>0.02</strong></td>
</tr>
<tr>
<td>Number of children per family</td>
<td>1.8 (0.9)</td>
<td>1.78 (0.86)</td>
<td>1.89 (0.95)</td>
<td><strong>0.02</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% of whole sample</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child order (1st child)</td>
<td>59.1</td>
</tr>
<tr>
<td>Children attending nursery (yes)</td>
<td>19.0</td>
</tr>
<tr>
<td>Child gender (female)</td>
<td>49.5</td>
</tr>
<tr>
<td>Parent gender (female)</td>
<td>96.7</td>
</tr>
<tr>
<td>Marital status (Married/cohabiting)</td>
<td>67.1</td>
</tr>
<tr>
<td>Ethnicity (White British)</td>
<td>64.8</td>
</tr>
<tr>
<td>Employment status (working)</td>
<td>36.1</td>
</tr>
<tr>
<td>Benefits (any type received excluding child benefit)</td>
<td>72.8</td>
</tr>
<tr>
<td>Education (none/GCSE &amp; equivalent)</td>
<td>39.0</td>
</tr>
<tr>
<td>Educational level obtained (secondary)</td>
<td>18.1</td>
</tr>
<tr>
<td>Educational level obtained (university)</td>
<td>42.9</td>
</tr>
</tbody>
</table>

### 4.3.5 Baseline diet of children for whole sample

Children’s mean intakes of fruits and vegetables were below the recommended minimum of five portions per day (or 200 grams) once fruit juice greater than one portion per day was excluded (table 4.3.5). The diversity/number of types was also fewer than five per day. Children consumed more fruits than vegetables, although the number of types was similar. The range of intakes of fruits and vegetables was wide, with some children consuming none at all. The range of intakes for sugary drinks and snacks was also wide, but the mean intakes appeared fairly low.
Table 4.3.5  Baseline diet of children for whole sample

<table>
<thead>
<tr>
<th>Primary outcomes</th>
<th>Whole sample (n=394)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>F&amp;V intake (grams) including ALL juice</td>
<td>227.0 (123)</td>
</tr>
<tr>
<td>V intake (grams) including ALL juice</td>
<td>66.0 (46)</td>
</tr>
<tr>
<td>F intake (grams) including ALL juice</td>
<td>161.0 (106)</td>
</tr>
<tr>
<td>F&amp;V intake (grams) excluding &gt;1 portion juice</td>
<td>180.0 (96.1)</td>
</tr>
<tr>
<td>V intake (grams) excluding &gt;1 portion juice</td>
<td>65.9 (45.3)</td>
</tr>
<tr>
<td>F intake (grams) excluding &gt;1 portion juice</td>
<td>114.1 (74.7)</td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>4.78 (2.08)</td>
</tr>
<tr>
<td>V intake (number of types)</td>
<td>2.35 (1.25)</td>
</tr>
<tr>
<td>F intake (number of types)</td>
<td>2.43 (1.33)</td>
</tr>
<tr>
<td>Secondary outcomes</td>
<td></td>
</tr>
<tr>
<td>Sugary drinks quantity (ml)</td>
<td>159.8 (216.3)</td>
</tr>
<tr>
<td>Sugary drinks (occasions)</td>
<td>0.96 (1.1)</td>
</tr>
<tr>
<td>Sugary snacks (occasions)</td>
<td>1.13 (0.7)</td>
</tr>
<tr>
<td>Sugary drinks + snacks (occasions)</td>
<td>2.09 (1.4)</td>
</tr>
</tbody>
</table>

4.3.6  Baseline diet of children by control and intervention groups

Children in the control group consistently consumed significantly more fruits and vegetables at baseline than children in the intervention group (table 4.3.6). However children’s intakes of sugary snacks and drinks did not differ between groups.
Table 4.3.6  Baseline diet of children by control and intervention groups

<table>
<thead>
<tr>
<th>Primary outcomes</th>
<th>Total (n=394)</th>
<th>Intervention (n=199)</th>
<th>Control (n=195)</th>
<th>Difference</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;V intake (grams) including ALL juice</td>
<td>227.0</td>
<td>202.6</td>
<td>252.2</td>
<td></td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>V intake (grams) including ALL juice</td>
<td>66.2</td>
<td>59.8</td>
<td>72.7</td>
<td></td>
<td>0.005**</td>
</tr>
<tr>
<td>F intake (grams) including ALL juice</td>
<td>160.8</td>
<td>142.8</td>
<td>179.4</td>
<td></td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>F&amp;V intake (grams) excluding &gt;1 portion juice</td>
<td>180.0</td>
<td>161.9</td>
<td>198.6</td>
<td></td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>V intake (grams) excluding &gt;1 portion juice</td>
<td>65.9</td>
<td>59.5</td>
<td>72.5</td>
<td></td>
<td>0.005**</td>
</tr>
<tr>
<td>F intake (grams) excluding &gt;1 portion juice</td>
<td>114.1</td>
<td>102.4</td>
<td>126.1</td>
<td></td>
<td>0.002**</td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>4.78</td>
<td>4.4</td>
<td>5.1</td>
<td></td>
<td>0.001**</td>
</tr>
<tr>
<td>V intake (number of types)</td>
<td>2.35</td>
<td>2.2</td>
<td>2.7</td>
<td></td>
<td>0.003**</td>
</tr>
<tr>
<td>F intake (number of types)</td>
<td>2.43</td>
<td>2.3</td>
<td>2.4</td>
<td></td>
<td>0.12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary outcomes</th>
<th>Mean</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugary drinks quantity (ml)</td>
<td>159.8</td>
<td>0.31</td>
</tr>
<tr>
<td>Sugary drinks (occasions)</td>
<td>0.96</td>
<td>0.47</td>
</tr>
<tr>
<td>Sugary snacks (occasions)</td>
<td>1.13</td>
<td>0.35</td>
</tr>
<tr>
<td>Sugary drinks + snacks (occasions)</td>
<td>2.09</td>
<td>0.93</td>
</tr>
</tbody>
</table>

4.3.7  Baseline diet of children by location

Children’s intakes of fruits and vegetables were very similar in both locations (table 4.3.7). The only significant difference between Islington and Cornwall was children's consumption of sugary drinks (measured in occasions only); children in Islington consumed sugary drinks on significantly more occasions than children in Cornwall. However, it appears that children in Cornwall consumed greater amounts overall (not significant).
Table 4.3.7  Baseline diet of children by location

<table>
<thead>
<tr>
<th>Primary outcomes</th>
<th>Total (n=394)</th>
<th>Islington (n=204)</th>
<th>Cornwall (n=190)</th>
<th>Difference</th>
<th>Mean</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;V intake (grams) including ALL juice</td>
<td>227.0 (123)</td>
<td>226.6</td>
<td>227.4</td>
<td>0.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V intake (grams) including ALL juice</td>
<td>66.0 (46)</td>
<td>66.2</td>
<td>66.2</td>
<td>0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F intake (grams) including ALL juice</td>
<td>161.0 (106)</td>
<td>160.4</td>
<td>161.3</td>
<td>0.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;V intake (grams) excluding &gt;1 portion juice</td>
<td>180.0 (96.1)</td>
<td>177.3</td>
<td>182.8</td>
<td>0.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V intake (grams) excluding &gt;1 portion juice</td>
<td>65.9 (45.3)</td>
<td>65.7</td>
<td>66.2</td>
<td>0.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F intake (grams) excluding &gt;1 portion juice</td>
<td>114.1 (74.7)</td>
<td>111.7</td>
<td>116.6</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>4.8 (2.08)</td>
<td>4.90</td>
<td>4.66</td>
<td>0.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V intake (number of types)</td>
<td>2.4 (1.25)</td>
<td>2.48</td>
<td>2.24</td>
<td>0.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F intake (number of types)</td>
<td>2.4 (1.33)</td>
<td>2.45</td>
<td>2.42</td>
<td>0.90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary outcomes</th>
<th>Mean</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugary drinks quantity (ml)</td>
<td>159.8</td>
<td></td>
</tr>
<tr>
<td>Sugary drinks (occasions)</td>
<td>0.96</td>
<td>0.04*</td>
</tr>
<tr>
<td>Sugary snacks (occasions)</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td>Sugary drinks + snacks (occasions)</td>
<td>2.09</td>
<td></td>
</tr>
</tbody>
</table>

4.3.8  Baseline diet of children by demographic and family characteristics

Children’s diets at baseline were associated with certain demographic characteristics (table 4.3.8). Intakes of fruits and vegetables were higher for married/cohabiting parents (types only), working parents, more highly educated parents, parents not receiving benefits, older parents and parents with fewer children. Intakes of sugary drinks were higher for single parents, less educated parents and older children. Intakes of sugary snacks were also higher for older children.
<table>
<thead>
<tr>
<th>Table 4.3.8</th>
<th>Baseline diet of children by demographic and family characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Binary/categorical variables</strong></td>
<td><strong>FV intake (grams) excluding &gt;1 portion juice</strong></td>
</tr>
<tr>
<td>Parent gender</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>White British</td>
</tr>
<tr>
<td></td>
<td>Non-White</td>
</tr>
<tr>
<td>Marital status</td>
<td>Married/cohabiting</td>
</tr>
<tr>
<td></td>
<td>Single</td>
</tr>
<tr>
<td>Employment status</td>
<td>Working</td>
</tr>
<tr>
<td></td>
<td>Not working</td>
</tr>
<tr>
<td>Educational level obtained</td>
<td>None/GSCE</td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
</tr>
<tr>
<td></td>
<td>University</td>
</tr>
<tr>
<td>Benefits</td>
<td>None received</td>
</tr>
<tr>
<td></td>
<td>Any type, exc. child benefit</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Continuous variables</strong></th>
<th><strong>CC</strong></th>
<th><strong>P value</strong></th>
<th><strong>CC</strong></th>
<th><strong>P value</strong></th>
<th><strong>CC</strong></th>
<th><strong>P value</strong></th>
<th><strong>CC</strong></th>
<th><strong>P value</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents age</td>
<td>0.129</td>
<td><strong>0.002</strong></td>
<td>0.152</td>
<td><strong>0.003</strong></td>
<td>-0.058</td>
<td>0.25</td>
<td>-0.018</td>
<td>0.72</td>
</tr>
<tr>
<td>Number of children</td>
<td>-0.133</td>
<td><strong>0.008</strong></td>
<td>-0.165</td>
<td><strong>0.001</strong></td>
<td>0.032</td>
<td>0.53</td>
<td>0.079</td>
<td>0.12</td>
</tr>
<tr>
<td>Child age</td>
<td>-0.047</td>
<td>0.36</td>
<td>-0.056</td>
<td>0.27</td>
<td>0.21</td>
<td>&lt;0.001**</td>
<td>0.17</td>
<td><strong>0.001</strong></td>
</tr>
</tbody>
</table>

Tests used: t-test for binary variables; One-way ANOVA for categorical variables (education); Spearman’s rank for continuous variables.
4.3.9  Comparison of children’s diet, according to number of recalls completed

Analysis of the dietary outcome data was undertaken to assess if differences existed between subjects according to how many recalls they completed out of a maximum 4 recalls. There was no significant difference for any of the child’s dietary outcomes (primary or secondary) according to how many recalls the parents completed (table 4.3.9). This confirms that subsequent analysis of dietary data was unlikely to be affected if all data are included in analyses, even if only one day’s worth of dietary data was available.

Table 4.3.9  Baseline diet of children: comparison by number of recalls completed

<table>
<thead>
<tr>
<th>N</th>
<th>1*</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary and secondary outcomes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;V weight (g) (including ALL juice)</td>
<td>222.4</td>
<td>238.8</td>
<td>227.2</td>
<td>232.9</td>
<td>0.52</td>
</tr>
<tr>
<td>F&amp;V weight (g) (excluding &gt;1 portion juice)</td>
<td>200.2</td>
<td>211.4</td>
<td>202.1</td>
<td>203.7</td>
<td>0.67</td>
</tr>
<tr>
<td>Sugary drinks (ml)</td>
<td>156.5</td>
<td>158.3</td>
<td>151.4</td>
<td>170.9</td>
<td>0.44</td>
</tr>
<tr>
<td>Sugary drinks (occasions)</td>
<td>0.98</td>
<td>0.95</td>
<td>0.91</td>
<td>0.96</td>
<td>0.90</td>
</tr>
<tr>
<td>Sugary snacks (occasions)</td>
<td>1.14</td>
<td>1.06</td>
<td>1.10</td>
<td>1.18</td>
<td>0.82</td>
</tr>
</tbody>
</table>

* e.g. 1 = mean of all 1391 recalls from 394 people completing recall 1

4.3.10  Baseline diet of parents for whole sample

Parents’ mean intakes of fruits and vegetables were well below the recommended minimum of five portions per day (or 400 grams) (table 4.3.10). The diversity/number of types was also fewer than five per day. Parents consumed similar amounts of fruits and vegetables, rather than favouring fruits like the children did. The range of intakes of fruits and vegetables was wide, with some parents consuming none at all. The range of intakes for sugary drinks and snacks was also wide, but the mean intakes appeared fairly low.

Table 4.3.10  Baseline diet of parents for whole sample

<table>
<thead>
<tr>
<th>Parental dietary outcomes</th>
<th>Whole sample (n=394)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
</tr>
<tr>
<td>FV intake (grams) excluding all juice</td>
<td>279.2 (190.3)</td>
</tr>
<tr>
<td>F intake (grams)</td>
<td>138.8 (140.5)</td>
</tr>
<tr>
<td>V intake (grams)</td>
<td>140.4 (114.9)</td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>4.3 (2.5)</td>
</tr>
<tr>
<td>Sugary drinks (ml)</td>
<td>295.9 (411.1)</td>
</tr>
<tr>
<td>Sugary foods (portions)</td>
<td>1.2 (1.4)</td>
</tr>
<tr>
<td>Sugar in hot drinks (tsp)</td>
<td>2.0 (3.5)</td>
</tr>
</tbody>
</table>
NB: FV intake does not include juice for parents as the dietary data was collected differently.

4.3.11 Baseline diet of parents by control and intervention groups

Parents in the control group consumed more vegetables, and more fruits and vegetables combined at baseline than parents in the intervention group (table 4.3.11). The only other significant difference was the number of sugars added to hot drinks, which was higher in the intervention group at baseline.

<table>
<thead>
<tr>
<th>Parents diet outcomes</th>
<th>Total (n=394)</th>
<th>Intervention (n=199)</th>
<th>Control (n=195)</th>
<th>Difference</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FV intake (grams) excluding all juice*</td>
<td>279.2</td>
<td>256.2</td>
<td>302.8</td>
<td></td>
<td>0.02*</td>
</tr>
<tr>
<td>F intake (grams)</td>
<td>138.8</td>
<td>128.6</td>
<td>149.2</td>
<td></td>
<td>0.15</td>
</tr>
<tr>
<td>V intake (grams)</td>
<td>140.4</td>
<td>127.6</td>
<td>153.6</td>
<td></td>
<td>0.02*</td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>4.3</td>
<td>4.1</td>
<td>4.6</td>
<td></td>
<td>0.06</td>
</tr>
<tr>
<td>Sugary drinks (ml)</td>
<td>295.9</td>
<td>311.7</td>
<td>279.7</td>
<td></td>
<td>0.44</td>
</tr>
<tr>
<td>Sugary foods (portions)</td>
<td>1.23</td>
<td>1.26</td>
<td>1.19</td>
<td></td>
<td>0.60</td>
</tr>
<tr>
<td>Sugar in hot drinks (tsp)</td>
<td>2.0</td>
<td>2.5</td>
<td>1.5</td>
<td></td>
<td>0.005**</td>
</tr>
</tbody>
</table>

* FV intake does not include juice for parents as the dietary data was collected differently.

4.3.12 Baseline diet of parents by demographic and family characteristics

Parents’ diets at baseline were associated with certain demographic characteristics (table 4.3.12). Intakes of fruits and vegetables were higher for non-White parents (grams only), married/cohabiting parents, working parents, more highly educated parents, parents not receiving benefits and older parents. The factors associated with consumption of fruits and vegetables were very similar for parents and children. Intakes of sugary drinks were higher for younger parents. Intakes of sugary snacks varied according to level of education, but the relationship was not linear.
## Table 4.3.12 Baseline diet of parents by demographic and family characteristics

<table>
<thead>
<tr>
<th>Binary/categorical variables</th>
<th>FV intake (grams) excluding all juice</th>
<th>FV intake (number of types) excluding juice</th>
<th>Sugary drinks (ml)</th>
<th>Sugary foods (portions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>P value</td>
<td>Mean</td>
<td>P value</td>
</tr>
<tr>
<td>Parent gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>342.9</td>
<td>0.22</td>
<td>4.1</td>
<td>0.71</td>
</tr>
<tr>
<td>Female</td>
<td>277.0</td>
<td></td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White British</td>
<td>265.6</td>
<td>0.05*</td>
<td>4.2</td>
<td>0.09</td>
</tr>
<tr>
<td>Non-White</td>
<td>305.0</td>
<td></td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/cohabiting</td>
<td>298.1</td>
<td>0.003**</td>
<td>4.6</td>
<td>0.003**</td>
</tr>
<tr>
<td>Single</td>
<td>238.1</td>
<td></td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>328.3</td>
<td>&lt;0.001**</td>
<td>5.1</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Not working</td>
<td>252.2</td>
<td></td>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td>Educational level obtained</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None/GSCE</td>
<td>221.0</td>
<td>&lt;0.0001**</td>
<td>3.4</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Secondary</td>
<td>259.1</td>
<td></td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>University</td>
<td>338.7</td>
<td></td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None received</td>
<td>338.1</td>
<td>&lt;0.001**</td>
<td>5.3</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Any type, exc. child benefit</td>
<td>257.1</td>
<td></td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Continuous variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents age</td>
<td>0.260</td>
<td>&lt;0.001**</td>
<td>0.180</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Number of children</td>
<td>0.018</td>
<td>0.72</td>
<td>0.006</td>
<td>0.91</td>
</tr>
<tr>
<td>Child age</td>
<td>-0.028</td>
<td>0.58</td>
<td>-0.036</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Tests used: t-test for binary variables; One-way ANOVA for categorical variables (education); Spearman’s rank for continuous variables.
4.3.13 Baseline parental scores for whole sample

Parental scores for food knowledge, attitudes and related measures varied widely across the range of possible scores (table 4.3.13). For the more desirable attributes of food knowledge, food confidence, nutrition self-efficacy and food involvement, the mean score was >75% of the maximum score. For the less desirable attributes of parental stress and child food fussiness, the mean score was approximately 50% of the maximum score. This implies that parents had a reasonable knowledge of basic healthy eating principles in relation to children (e.g. how many portions of fruits and vegetables they should be eating, order of quantities on ingredients lists, water and milk being the best drinks). They were reasonably confident in their approach to feeding their child (e.g. cooking from basic ingredients, following a recipe, introducing new foods) and their own ability to stick to healthy foods and overcome barriers to healthy eating (nutrition self-efficacy). They were also quite involved with various aspects of food including acquisition, preparation, consumption and enjoyment of food (food involvement). However, some parents experienced problems with child-feeding including fussiness and food refusal. They also reported some feelings of stress and pressure related more generally to childcare and being a parent (e.g. too little time by themselves, child too demanding, could be a better parent).

Table 4.3.13 Baseline parental scores for whole sample

<table>
<thead>
<tr>
<th>Parental scores</th>
<th>Whole sample (n=394)</th>
<th>Range of possible scores</th>
<th>Mean (SD)</th>
<th>Range of actual scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food knowledge</td>
<td>0-6</td>
<td>4.3 (1.23)</td>
<td>1-6</td>
<td></td>
</tr>
<tr>
<td>Food confidence</td>
<td>4-20</td>
<td>16.8 (2.7)</td>
<td>8-20</td>
<td></td>
</tr>
<tr>
<td>Nutrition self-efficacy</td>
<td>5-20</td>
<td>15.0 (3.7)</td>
<td>3*-20</td>
<td></td>
</tr>
<tr>
<td>Food involvement</td>
<td>12-60</td>
<td>47.22 (6.34)</td>
<td>18-60</td>
<td></td>
</tr>
<tr>
<td>Parental stress</td>
<td>8-40</td>
<td>19.3 (4.8)</td>
<td>8-33</td>
<td></td>
</tr>
<tr>
<td>Child food fussiness</td>
<td>6-30</td>
<td>16.1 (5.5)</td>
<td>4*-30</td>
<td></td>
</tr>
</tbody>
</table>

* Some questions left blank

4.3.14 Baseline parental scores by control and intervention groups

Parents in the control group scored higher for food confidence and nutrition self-efficacy (ability to stick to healthy foods) and lower for parental stress and child’s food fussiness (table 4.3.14). Food knowledge and food involvement scores were not significantly different between the intervention and control groups at baseline.
### Table 4.3.14  Baseline parental scores by control and intervention groups

<table>
<thead>
<tr>
<th>Parental scores</th>
<th>Intervention (n=199)</th>
<th>Control (n=195)</th>
<th>Difference</th>
<th>Mean</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food knowledge</td>
<td>4.2</td>
<td>4.4</td>
<td>0.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food confidence</td>
<td>15.8</td>
<td>17.8</td>
<td>&lt;0.0001**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition self-efficacy</td>
<td>14.5</td>
<td>15.6</td>
<td>0.005**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food involvement score</td>
<td>46.6</td>
<td>47.5</td>
<td>0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental stress</td>
<td>19.9</td>
<td>18.7</td>
<td>0.01*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child food fussiness</td>
<td>17.1</td>
<td>15.1</td>
<td>0.0002**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4.3.15  Summary

The qualitative and quantitative data gathered in the initial development phase of the study provided valuable insights into the experiences and perspectives of parents and children centre staff. This data was particularly useful in informing the subsequent development of the different components of the Cherry programme and in how best to deliver these in a children centre setting.

In the exploratory trial, the recruitment approaches proved very successful in both study locations. At baseline, a total of 394 subjects were recruited into the study. Overall the sample was relatively disadvantaged with the majority receiving means tested benefits and over a third educated only up to GCSE level. The intervention and control groups were reasonably well matched in terms of socio-demographic, child and parental measures although the control group did consume more fruit and vegetables than those in the intervention group.
Chapter 5 – Process evaluation: nature, delivery and stakeholders views of the intervention

5.1. Introduction

An essential component of an exploratory randomised controlled trial is the process evaluation to assess how the intervention was delivered and its acceptability to key stakeholders (Medical Research Council, 2008). An embedded process evaluation provides insights into:

- nature of intervention and identification of ‘active’ components
- contextual differences in delivery of intervention (fidelity) across study sites
- acceptability and feasibility of intervention and its evaluation
- variation in the extent and quality of implementation

Process evaluation data were collected using a variety of methods throughout the implementation and evaluation phase of the trial in the following manner:

1. **Feedback on Cherry sessions from parents and tutors**
   During the delivery of the intervention, Cherry participants and tutors were asked to provide feedback at the end of each session. Questions included: What did you like or dislike about the session? How could it have been improved? What went well or not so well?

2. **Informal discussions at reunion sessions**
   Reunion sessions were held at the children’s centres three months after the intervention, when parents had the opportunity to provide more detailed qualitative feedback in a focus group setting. Discussions included issues such as: What changes have you managed to implement at home since Cherry? Have your child’s eating habits improved? What have you found difficult to change? Would you recommend the course to other parents with young children?

3. **Follow up questionnaire with parents**
   Parents from the intervention group were also asked their views on the intervention in the six month follow up questionnaire. Questions included: Which sessions/activities did you find the most useful? What changes have you made to your own/your child’s diet? Which food activities and eating behaviours do you do at home now that you didn’t do before Cherry, and what were the barriers to implementing the knowledge and skills you gained?

4. **Qualitative semi-structured interviews with key informants**
   Semi-structured telephone interviews were conducted with a purposively selected sample of individuals (n=11) from both Islington and Cornwall. Those interviewed included the Cherry trainers, some parents who attended Cherry sessions, some children’s centre staff and the two main researchers involved in collecting data and supporting the study. These interviews explored views on the nature of the intervention, its delivery, sustainability and its potential impact. Discussions also focused on what were considered the positive features of the intervention, as well any problems that had occurred.

5.2. Overview of the delivery of the intervention

5.2.1 Recruitment onto Cherry
A range of different approaches were used to recruit the study sample. These included children’s centre staff referrals, face to face contact (attending stay and plays), displaying posters in children’s centres, private nurseries, GP surgeries, and other local community groups, displays in children’s centres, newsletters etc. The same recruitment strategies were used for the intervention and control groups as far as possible.

Some children’s centres (particularly in Cornwall) were less willing to talk to and refer families than others. In general, the intervention groups contained more parents who were referred by children’s centre staff (including health visitors, family support workers, play workers) because there was a tangible benefit (attending Cherry) for families in need of support. In some cases (again, in Cornwall), children’s centre staff did help to recruit parents into the control groups but this did not always result in equivalent numbers of low income families or families in need of support.

In Cornwall, in some areas there were not many stay and play sessions running due to staff shortages or the sessions were very quiet so this limited recruitment opportunities. Also, in some areas the sessions are attended by more middle class parents so it was difficult to access sufficient numbers of low income families or families in need of support. In Islington, there were more opportunities for recruitment as nursery parents provided a ‘captive audience’. In some centres, staff asked parents to take part which significantly increased the numbers recruited. It also made it much easier to follow these parents up as they were less likely to have moved and in the few instances where they had, centre staff were able to provide new contact details.

In phases 1 and 2, posters were distributed in local schools, nurseries, libraries, GP surgeries as well as displayed in the reception of children’s centres. The posters included a number which parents could text to register their interest. This method was completely unsuccessful (zero parents recruited) so it was discontinued in phases 3 and 4.

Figure 5a shows the methods of recruitment used in both locations. By far the most successful methods were face to face at stay and play sessions (46%), referrals from children’s centre staff (28%), of which 24% was in Cornwall, and nursery parents (12%) all of whom were in Islington.
5.2.2 Attendance at Cherry sessions

In Cornwall, 38% of parents attended all 4 Cherry sessions and 24% attended 3 out of 4 sessions (figure 5b). Overall attendance rates varied between children’s centres from 38% (phase 5) to 74% (phase 3). In Islington, 37% of parents attended all 4 sessions and 15% attend 3 out of 4 sessions. Attendance also varied extensively between centres from 41% (phase 2c) to 70% (phase 2).

![Figure 5b Overall attendance at Cherry sessions for all phases and both sites](image)

5.3. Summary of feedback from Cherry sessions

Participants were asked a range of questions at the beginning and at the end of the Cherry programme. Parents reported major improvements in their level of confidence and were more knowledgeable about healthy eating at the end of the programme (table 5.3.1).

5.3.1 Levels of confidence pre- and post-intervention

<table>
<thead>
<tr>
<th>Questions asked*</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>How confident do you feel about knowing what the right foods are for under 5s? (% very confident)</td>
<td>47%</td>
<td>95%</td>
</tr>
<tr>
<td>How confident do you feel about knowing how much under 5s should eat? (% very confident)</td>
<td>23%</td>
<td>64%</td>
</tr>
<tr>
<td>Are you concerned that your child doesn’t eat enough fruit and vegetables? (% yes)</td>
<td>47%</td>
<td>37%</td>
</tr>
<tr>
<td>Are you concerned that you don’t eat a good diet yourself? (% yes)</td>
<td>39%</td>
<td>32%</td>
</tr>
<tr>
<td>Would you like more information on how to eat well? (% yes)</td>
<td>88%</td>
<td>63%</td>
</tr>
</tbody>
</table>

*Not all parents answered all the questions, so the percentage is calculated based on those parents that did answer each question
5.3.2 Parental satisfaction with the Cherry project

At the end of each Cherry session participants were given post-it notes to indicate their level of satisfaction with the session. As shown in table 5.3.2, participants appeared to enjoy the sessions very much, learned new information and found the food activities enjoyable. Session 3 appeared to be the most enjoyed session in the programme.

<table>
<thead>
<tr>
<th>Questions asked</th>
<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
<th>Session 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you enjoy the session? (% ☑)</td>
<td>94%</td>
<td>93%</td>
<td>98%</td>
<td>97%</td>
</tr>
<tr>
<td>Did you learn new things about…..? (% ☑)</td>
<td>87%</td>
<td>80%</td>
<td>85%</td>
<td>*</td>
</tr>
<tr>
<td>Did you enjoy the food preparation activity? (% ☑)</td>
<td>87%</td>
<td>95%</td>
<td>91%</td>
<td>*</td>
</tr>
</tbody>
</table>

* Other questions were not consistently asked in Cornwall and Islington so have not been included

Some parents also wrote comments on the post-it notes, which provided more information about what they liked and disliked. The interactive elements of each session were popular, for example the fat/salt/sugar game, Tiny Tastes chart and cooking activities. Parents described how they enjoyed being in the sessions with each other and sharing their experiences. They also enjoyed spending time with their child and preparing food together. Many parents were surprised by the foods that their child would try in this group environment. They appreciated the new recipes and realised that “good food can taste nice”. Some parents were sad when the course ended and said they would have liked it to be longer.

Some parents reported that they found it difficult to concentrate when their child was in the crèche, particularly those whose children were unfamiliar with attending a crèche and became upset and distressed. Often this depended on the layout of the building and whether the parents could hear their children and vice versa. In one of the community buildings in Cornwall (phase 1) parents complained about it being cold. Some parents did not like the “classroom” style of the sessions when parents were discussing and learning without the children during the first hour of each session. Some parents were also frustrated when the pace of the session was too slow or disrupted by others.

The Cherry tutors and researchers who assisted in some of the sessions also provided their views on how the sessions went (section 5.5).

5.4 Summary of comments from follow-up questionnaires

5.4.1 Attendance at Cherry

The most common reason for missing Cherry sessions (22%) was due to time constraints and being too busy, followed by 12% missing sessions due to illness (either themselves or their child) (figure 5c). Of the 14 parents who completed the questionnaire but did not attend any Cherry sessions, 8 (57%) missed the course due to time constraints, 1 due to childcare problems, and 5 due to the illness.
5.4.2 How beneficial was the Cherry programme and which sessions was most useful?

The vast majority of parents attending the sessions found them to be beneficial with 50% reporting them to be very beneficial and 39% quite beneficial. Only 10% of parents did not find the sessions beneficial at all (figure 5d).
Over one third (37%) of parents found that the most useful session was overcoming fussy eating (figure 5e). Sessions 1 (Family friendly foods) and 3 (Healthy snacks and drinks) were found useful by almost a fifth of participants. Session 4 on food shopping and budgeting was less popular with only 7% of parents reporting this session as useful.

Parents were also asked whether they had altered their children’s and their own diets as a result of coming to the Cherry project. The following summarises the comments parents made about dietary change.

### 5.4.3 Changes to children’s diet

Overall, the majority of parents reported making positive changes to their children’s diets in a number of ways in line with the programme objectives (table 5.4.3). The following table groups the responses into themes according to some of the study outcomes. Twelve parents (10%) did not respond to this question, and 19 parents (15%) of said they did not make any changes to their children’s diets. The three most frequently reported changes were increasing consumption of fruits and vegetables (43%), changing to healthier snacks (26%) and introducing new foods (21%).
<table>
<thead>
<tr>
<th>Theme</th>
<th>Examples</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food habits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating habits</td>
<td>Eating together as family more, only cooking 1 meal</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Budgeting for food and planning meals</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Gained confidence around children’s food</td>
<td>Being more relaxed with food</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Have more persistence</td>
<td>Don’t give up when child doesn’t like a food</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Cooking &amp; choosing food</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooking CWT recipes</td>
<td>Making wedges and tomato salsa, trying lots of different recipes regularly, doesn’t just make burgers with meat (using bean burger recipe), ratatouille</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>More ideas for cooking</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Understanding and reading labels more</td>
<td>Looking out for fat/salt/sugar more</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Child more involved in cooking</td>
<td></td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Introducing new foods</td>
<td></td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Using the Tiny Tastes chart</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Diet quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating more balanced meals and having more variety across the week</td>
<td>Using the Eatwell plate, increasing protein for vegetarians</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Changes in amount of fruit and vegetable eaten</td>
<td>Always offers FV at meals, children eat new types, greater variety of FV, more veg in recipes (e.g. Bolognese), children ask for FV where they didn’t before</td>
<td>43</td>
<td>34</td>
</tr>
<tr>
<td>Using frozen veg</td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Healthier foods</td>
<td>Fewer ready meals</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Reduced sugar</td>
<td>Fewer sweets, less dried fruit as snacks, avoiding sugary cereals</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Reduced salt</td>
<td>Not having salt on the table, reducing in cooking, adding herbs instead</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Altering portion sizes</td>
<td>Reducing portion sizes</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Changes to healthier snacks</td>
<td>Frequency, type, healthier alternatives, giving fruit/veg, fewer sugary biscuits and sweets</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td><strong>Drinks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluting juice/squash more</td>
<td>Adding water to fruit juice; weaker squash</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Changing drinks</td>
<td>Changing to milk/water only, giving less squash, giving plain water, no longer giving fruit shoots</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Juice</td>
<td>Cutting down amount, changing to pure juice</td>
<td>16</td>
<td>13</td>
</tr>
</tbody>
</table>
5.4.4 Changes to parents’ diets

The number of parents who reported making no changes to their diet was much greater than those making changes to their children’s diets (table 5.4.4). 40% of parents reported that they made no change and 11% gave no answer. The most common changes were increasing fruit and vegetable consumption, both in quantity and in variety (14%), eating a healthier diet more generally (11%) and cutting down on sugar in particular (9%).

Table 5.4.4: Changes made to parents’ own diet following the Cherry programme

<table>
<thead>
<tr>
<th>Theme</th>
<th>Examples</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food habits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating with children</td>
<td>Acting as a role model, eating with children and the rest of the family</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Eating the same foods the children</td>
<td>Making the same changes to their diets as they have done for their children; parental role modelling</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td><strong>Cooking &amp; choosing food</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding and reading labels more</td>
<td>Looking out for fat/salt/sugar on labels, checking values per 100g.</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Dietary quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eating a more balanced diet</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Reduced sugar</td>
<td>Fewer sugary foods (sweets, biscuits, puddings), less junk food</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Changed snacks</td>
<td></td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Reduced salt</td>
<td>Stopped using salt as a result of CWT recipes, watching for salt in packaged food</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Making more recipes</td>
<td>Cooking from scratch, bigger repertoire of foods</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Portions</td>
<td>Cut down on portion sizes</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Changes in amount of FV eaten</td>
<td>More fresh, frozen fruit and veg. Bigger variety, more aware of 5 a Day,</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Eating healthier foods</td>
<td>Know how to make healthier choices, choosing the healthy option where possible,</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Gone on a diet since Cherry</td>
<td>Want to lose weight</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td><strong>Drinks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinking more water</td>
<td></td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Changed drinks</td>
<td>Cut down coffee and tea, less sugar in hot drinks, stopped fizzy drinks, diluting juice, stopped buying packet juice</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>
5.4.5 ‘Cherry at Home’ - Tiny Tastes chart

As fussy eating was a particular concern for many parents and the Tiny Tastes charts were designed specifically as a home-based activity to address this problem, we asked parents their experience of using the activity. Almost half the parents (48%) reported that they had used the Tiny Tastes charts at home (figures 5f and 5g). Of those parents that used it, 82% agreed or strongly agreed that it had helped them to learn something new. 73% agreed that it had helped to make their children more willing to try new vegetables.

13% of parents said they had used it sometimes or repeatedly and it had been very helpful at enabling them to introduce new foods to their child, that the children had really liked the stickers and that they would continue to use it in the future.

Of those parents who did not use the Tiny Tastes chart, the most common reason was that the child was too young (n=11), that the child already liked vegetables (n=9) or that the parent was too busy (n=8).

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Figure 5f Views on learning from Tiny Tastes

Figure 5g Views on value of Tiny Tastes in getting children to try new vegetables
Many felt that it was a good idea but that they were too busy to use it, lost it, or used it in a modified way. Some parents did not use the chart in its entirety, but used the stickers on their own. The majority of parents who did not use it felt that their children were too young for it, and were too young to draw or because they would not understand the concept of rewards over time. A number of parents said that they would like to use it as their children got older or use it with older siblings in the meantime.

5.4.6 Comments on any other aspect of the Cherry programme

Parents were asked to provide extra comments to an open question in the questionnaire on any aspect of the Cherry programme. There were many positive comments about the course, for example:

“when’s the next one?”

“very positive course, good format and enjoyed the peer support”

“loved the course; more chilled out about child's eating now”.

Sharing information and positive experiences with other parents and realising they were not alone was a positive experience for many parents:

“I thought it was great because I thought I was the only one - helped to hear from other mums with similar problems”
Parents reported gaining confidence from attending which enabled them to make positive dietary changes both for their children and themselves:

“(Cherry) gave me confidence to deal with fussy eating and not get upset about it. Helped me have realistic expectations of what child should eat”.

Many parents felt that the course had taught them to know what was healthy and what was not; the salt/sugar/fat game, Tiny Tastes chart and the “Haribo and coke demo” were considered helpful in particular. There were a number of positive comments that the course had helped their learning; it “opened their minds”, and was “interesting and eye opening”.

Although the majority of the comments were very positive, some criticisms were made of the course. In one area a number of parents appeared unhappy with a course tutor who was seen as not being a particularly effective trainer:

“Tutor was patronising”

“Tutor not very good, kept repeating herself”

“Tutor clashed with group - came across abrupt and rude and talked down to younger mothers (told them off etc.) so they ignored her”.

Some of the criticism was also related to the course format with some parents reporting that the programme was too short, at times rushed, too formal, that the “talking” took up too much time so that the information given at the end was rushed, and that they would have preferred more time cooking as that was the most useful part. One parent felt that there were parents there who did not need the support and others would have benefitted more.

Finally, criticisms were also made with regards to the content of some of the sessions with some parents feeling that it was too basic:

“There was too much info on 5 a day and general info”

“Wanted more in depth nutrition info”

“A lot was just common sense”.

5.5. Qualitative semi-structured interviews with key informants

A description will now be made of the main themes emerging from the individual semi-structured interviews. To maintain confidentiality the identity of individuals is not revealed.

5.5.1 Variation within and between children’s centres in engagement with programme
The Cherry programme was considered by early years staff in both areas to meet the priorities of children’s centres and as a consequence staff were more inclined to support the project. In particular the programme helped the centres meet their educational outcomes for Ofsted and other priorities around healthy eating, so there was a real incentive to get involved. There was an explicit written agreement from all centres not to run any other food related initiatives during the study and this helped to avoid contamination during the delivery period (see appendix 16a).

Many staff reported having previous experience in similar programmes such as Mini-Mend, cook and eat sessions and many other structured programmes where regular attendance was required. This valuable expertise undoubtedly helped to facilitate, by and large, the smooth set up and running of Cherry.

5.5.2 Variability between and within sites centres in identification of parents

The involvement of staff in the identification of parents to participate was essential to the study, in particular being able to deliver to time and to meet recruitment targets. The centre locations were somewhere that was familiar to local users and staff had established relationships and high levels of trust with many of the Cherry participants. Children centre staff in both areas helped to recruit parents for the intervention and control groups, though the degree to which this was targeted varied considerably between centres. Some parents were directly recruited on the street and at the local shopping centre, a technique that the centres use regularly to increase uptake of their services. At all centres, staff were asked to collect names and numbers of possible parents. The support and cooperation of centre staff in recruiting parents may well have affected the mix of parents who attended the sessions and the reasons for their attendance.

The free childcare offered to parents that attended was essential to running the programme. The free fruit and vegetables boxes given to parents at the end of the sessions were also seen as an incentive, and may have helped to reinforce key dietary messages, though this only happened in one area.

5.5.3 Facilities and structure of children’s centres

The original study design deliberately sought to explore differences in delivering the intervention in contrasting rural and urban settings. However the true magnitude of the difference in how children’s centres were organised and run in the two study areas had not been expected. The nature of children’s centres in a rural area like Cornwall is about offering a range of services in different rural locations across the local geographical area rather than through a single centre. Some sessions took place in modern, newly built environments while others took place in church halls, which parents were used to sessions being held in. The delivery of Cherry was often affected by the limited facilities that were available, though the trainer was able to adapt the programme to reflect the facilities in some centres. The facilities for delivering Cherry in Islington were for the most part good. Of the four centres where sessions were held, one was held in a ‘family room’ with a kitchen adjacent, two were held in the crèche with no cooking facilities, but access to an oven in another room, and one was held in the centre’s café.

“There wasn’t the facilities there – I thought I was going for the cookery lessons but there wasn’t any real cooking facilities.” (Individual interview, Cornwall)
“They had equipment [which] overall was okay. Sometimes the organisation could have been better. We sometimes were doing the cooking at the same time as the CC children were eating and we didn’t have enough plates and bowls etc. Overall it was alright.” (Trainer, London)

The successful running of the cooking element of Cherry was less to do with the facilities available, i.e. being in a conventional ‘kitchen’, but more that the staff were prepared with all the equipment needed beforehand, and that centre staff could help with running food-based activities.

In contrast to Cornwall, in Islington children’s centres are generally large organisations, with a lot of staff working in a range of capacities and roles. Although the funding and management systems differ across centres in Islington, they follow the same overall model; all centres provide child care (full and part time), as well as a range of other services including child and family health services, family support, antenatal and postnatal care, legal advice, language support etc, as well as outreach services (which are similar to those provided in Cornwall).

5.5.4 Trainer background and support

In the two study areas, the lead trainers responsible for delivering the programme were very different in terms of their professional background and age. In Islington the trainers had a professional nutritional background, whereas in Cornwall the trainer had a more general background, specialising in early years training. All trainers attended a core training session covering the key elements of the programme and used the same training materials and resources. There may have been benefits to having a nutrition background to be able to answer queries as they arose; this may have led to increased credibility with parents who were attending the programme.

“For example I think all the manual everything was clear and alright, the people were asking questions on about different food groups, different types of fats and very precise questions so because of my background I was able to answer, if I did not have that background, not a degree but a course in nutrition then I think it would have been difficult.” (Trainer, Y)

The extent to which this variability in professional background affected the outcomes of the programme is difficult to identify, but it appears to have affected the parents’ overall opinion of the sessions and feedback from the other support workers. There was inevitably variation in the trainers’ approaches in running the groups which also had to take account of the diversity within the parental groups. Balancing that diversity and differing levels of expectation was important in ensuring that the parents had a positive experience of the programme. Some parents found the delivery to be a bit ‘patronising’ and too basic, they felt that they knew the messages already and so the intervention did not extend beyond their own knowledge. The trainers’ abilities to deal with differing expectations and managing group dynamics was difficult at times. When there was less diversity in the group then the way in which the session was delivered was perceived as more positive.

“The first week was taken up with telling us how to behave, we are all adults you know, I’m sorry but we did not need it that simple. We are adults, we are parents, it felt a bit patronising.” (Cornwall, reunion session 1).
“Patronising – I felt it was a bit like health visitors reading from the manual. It was the way she put things. She seemed a bit too teacher like” (Reunion session 3, Cornwall)

“The tutor could have been more effective but she did not deal well with the noisy (but enthusiastic) group; some parents wanted to explore some topics more but they did not have the opportunity; she also said things that seemed incorrect and she did not admit when she did not know the answer; she should have told the group that she was not an expert; however the food prep was really good”. (Phase 4 Cherry, questionnaire feedback, Cornwall)

The support offered to the lead trainers varied between centres and across areas, and it was not always clear what the roles of the different people at the training sessions were. The support for trainers was recognised as being important but at times some tension emerged during the sessions due to lack of clarity of the roles of different individuals during the sessions.

“Having a coordinator [extra staff member to support] not only come to the session but take part was detrimental. She did not have group work experience, she was taking over the session and talked. I felt that I should have had the same helper for every single session. [She] was sat there talking and talking when she should have started the food preparation” (Trainer, x)

The trainers therefore found it difficult to adjust to different levels of support between children’s centres and the different people who gave that support. Support in Cornwall was given by a number of different people, from those with a nutrition background to those with an adult education background. One of the trainers in London found it easier to run the sessions by herself, rather than as a team of two. When the trainers were leading the session on their own, but with one other member of staff in a clearly defined supportive role, the sessions tended to run well.

“I think the beginning of the programme I did it with another colleague that was difficult – when you work in pairs – you need to well prepare the session with the colleague and the problem was that my colleague and I did not have time to prepare the session beforehand… we did not have time to see each other before the session so it was difficult for the session so that is when I was on my own I found it easier, you had more control of the session.” (Trainer, Y)

“…Need the same person at every session. I had to go through it all over again with different people. The last person they gave me was not very well and she was pregnant and she was not very good.” (Trainer, X)

During the running of Cherry, the interaction between the trainers in the two areas was minimal. They had attended a one-off training session at the beginning of the programme and whilst the content, confidence and strategies developed by the trainers grew during the trial they were not shared between areas so each of them effectively developed the programme with little feedback. They became more confident as each session was run though this was further dependent upon the types of parents that attended sessions (see 5.6.3).

5.5.5 Nature of the intervention
The development of the initial intervention was theory driven and stakeholder led. The content of the programme was based on an extensive review of previous interventions and focus group discussions with parents and centre staff. Its development therefore sought to address the individual, household and to some extent environmental factors that affected whether parents were able to eat and choose a healthy diet. However, the final content of the intervention dealt primarily with some of the individual and family level factors, and to a much lesser extent the environmental issues. The programme was aimed at building self-efficacy and whilst the core messages were consistent between the two study locations, the delivery and the content was also parent-led because of interactive nature of discussions that arose during the sessions.

5.5.6 Adaptability of the intervention

There was some tension around the delivery of the core didactic nutritional messages that needed to be disseminated in terms of standardising the intervention, and adapting to the facilities and responding to the needs of the parents that attended the sessions. The original training programme for the trainers reinforced the need to get all the information across during the four sessions and so this required the trainer to be able to adapt to different contexts that reflected centre facilities, parental diversity and variation in support needs.

“Because it was research and you wanted it to be exactly the same at each venue that it is being delivered we have to have a set lesson plan. Of course there has to be some variance and there are different people, different children and different tutors as well but the tutor knows it must the same to follow, they can do it if they follow it.” (Trainer, x)

5.5.7 Variability of the parents who attended

The reasons for parents attending affected may also have affected the degree to which they were likely to change behaviours. The main reasons for attending appeared to be those associated with dealing with fussy eating, interest in healthy eating or because the centre staff encouraged them to attend. This variability therefore may have led to differences in outcomes for individuals within a centre.

“I check there is not much fat and the food is organic. I only buy organic and don’t eat tinned foods. It’s not in our culture, it tastes different to what we get in our culture.” (London, reunion session 1)

“Just because I wanted to get better knowledge of what to give him to eat and find out more about sugar and salt content of food” (Cornwall, reunion session 3.)

“To be totally honest, I had a fair idea of what healthy eating was before, both me and the children and my husband, well not so much my husband have always been big fruit eaters and I have always done meals that are basic, you know pork chops and veg. You know we don’t eat ready meals or anything like that, we eat kind of basic traditional types of foods. We do use cooking sauces, proper meat and veg. You know Cherry did point out the sugar and salt content and give us some ideas of recipes and things so it did point a lot of things out that I had already knew maybe it drilled the message a bit harder. ….I did more or less know.” (Individual interview 1, Cornwall)
5.5.8 Variability in attendance rates

The variability in the attendance rates between centres outlined in figure 5b may also have affected the outcomes as each week focused on a different aspect of healthy eating and so parents received different amounts of subsequent in separate areas.

The poorest attendance was possibly because the last Cherry course was organised late in the project (to meet the target numbers) and the recruitment had to be rushed. Some of the parents who signed up for the programme in Cornwall subsequently decided it was not for them and 5 out of 12 parents did not attend any sessions. Three of these parents were perceived as very needy and had been encouraged to attend Cherry by the children’s centre staff. The best attendance occurred in children’s centres where parents regularly attended stay and play sessions and were used to attending the centre and there was a strong network supported by the staff. In Cornwall, centre staff and health visitors assisted with recruitment in all five centres, but the level of support during this process varied between centres. This variation made a difference to the type of parents recruited, the recruitment of parents by staff inevitably led to targeting the programme at those perceived to have the greatest needs. Therefore in centres where targeted recruitment had not taken place, the mix of parents in the sessions was very different which led to a different dynamic between centres (level of need) and their attendance at Cherry.

Attendance at some centres was very low due to initial problems establishing the programme, difficulties with parental engagement and lack of communication between centre staff. Some of the parents who missed sessions informed the trainers in advance that they would be unable to attend, reasons for which included: other family commitments, childcare problems, doctor’s appointments, family bereavement and holidays. Some parents struggled with a language barrier which possibly deterred them from coming back. One parent said they were embarrassed because their child would not settle in the crèche which disrupted the group and she did not feel able to come back; it is possible this was the same for some other parents whose children were using a crèche for the first time.

“I was really nervous before the first session because she’d only been left with my family, and so I wasn’t sure how she’d settle but she was actually fine. I think the taster session (for the subsequent Cherry at this centre, there was a crèche taster session the day before to fill out paperwork and get the children used to their parents leaving them) is a really good idea.” (London, reunion session 1)

Those parents that missed sessions were still given the information and course handouts but they would have missed out on the wider discussion at the group sessions and the extra learning and ideas that arose from these.

“A lot of things are given in books and leaflets, talking about and learning about it in that way is much better that is when you take it in.” (Cornwall, reunion session 1)

5.5.9 Group dynamics

Inevitably, some groups had a better dynamic than others, and for these groups, attendance was very good. In contrast some groups had a couple of very strong personalities which made the atmosphere
quite tense and possibly deterred people from attending. This was more obvious at sessions where the mix of parents was very diverse and some parents who lacked confidence in groups were less likely to be vocal and feedback at the reunion sessions was more biased. Parents with poor English and those who had been referred, tended to have the poorest attendance. The first session was very important for making parents feel comfortable and to encourage further attendance.

5.9.10 Content of the programme

The variation in the parents that made up the group sessions influenced the feedback that was given at the end of the sessions. Some complained that the way in which this was done was too basic and they struggled to give feedback. The feedback at the end of the session was undertaken in a manner to allow for those with literacy problems, which was thought to have been higher in the targeted group.

The feedback was given as ‘smiley faces’ on a chart in front of the trainer. It may have been more beneficial to use an iterative process of improvement of the programme after the sessions. This may also have helped the trainers develop the programme and have helped them adapt to different contexts.

The feedback from the parents at the end of each session was generally positive but the content for some was too basic and they found the delivery too health professional led:

“I felt it was a bit like health visitors reading from the manual. It was the way she put things. She seemed a bit too teacher like. Comments like do you know to your hands, I am 43 years old, you stop telling me to wash my hands please”. (Cornwall, reunion session 3)

“It was the wrong level. This was designed for people who don’t get anything” (Cornwall, reunion session 3)

The opinions were clearly influenced by the style of the trainer and by the socio-demographics of the parent:

“Things were quite squashed in – The teacher did not seem to know where to go next (this was the first session) It may have be nice to do all practical and cooking, maybe one week to do practical and one week learning.” (Cornwall, reunion session 1.)

“It made me realise stuff that that I should have known that I didn’t really think of, as soon as the lady teacher set it I thought I didn’t really think of that. [Can you give me any examples?] The main thing was fruit and that. I have always given the girls fruit as snacks but when she said the sugars in the fruit and the teeth and to give it with other foods, I hadn’t thought of that.” (Cornwall, Reunion Session 1)

The sessions that many parents found particularly useful were healthy snacks and drinks. The strategies for dealing with fussy eating through ‘Tiny Tastes’ which gave the parents tips on how to increase exposure to foods also worked well for some parents.

“She (daughter, aged 2.5yrs) didn’t have too much unhealthy stuff before anyway but the Tiny Tastes definitely helped increase the variety of veg she ate. I didn’t use the chart but she
loved the stickers. Now if there’s something I want her to try, I say ‘I’ll get you a sticker’ and it does work. Maybe I’ll use it when she’s a bit older.” (London, reunion session 1)

“TT chart was really good, husband has also used it lots, it was the most useful thing; Loved the course; more chilled out about child's eating now; more confident about negotiating about food/saying no; the trainer was really good, possibly a bit slow.” (Cherry 3, Cornwall, feedback from questionnaire)

“The most important thing to happen after Cherry is that my daughter is now eating tangerines which she didn’t like before. She used to put them in her mouth and spit them out and now she’ll actually eat them. It wasn’t thanks to the Tiny Tastes chart, I never actually used that. [It’s not too late to use it though] I know, I will use it though.” (London reunion session 1)

Others used the learning to read labels more carefully.

“I probably look at labels more now; A lot of the food packages need to redo their labels, their calories are not correct. I don’t know what to believe. I spend a lot of time in the supermarket looking at labels.” (Cornwall, Reunion session 1)

The content of the sessions was perceived as generally good, but feedback in one area was that the recipes were not reflective of regional eating habits. Many of the recipes that were tried were not the types of foods that the parents said that they or their family would eat. Some parents from Cornwall reported having very ‘traditional’ diets and were reluctant to try foods such as ‘chick peas’ or ‘couscous’. Others relished the fact that they were able to try something new they were unable to get the family to try it at home.

5.5.11 Effects of intervention – what worked for whom?

There were different opportunities for change through the variability of the information and the diversity of the messages within the programme, so whilst the main outcome was centred on increasing fruit and vegetables, many parents reported that they had incorporated other aspects of healthy eating into their diets which they found particularly beneficial. The programme therefore triggered different changes amongst parents. Even in those parents that already perceived that they were doing the ‘right’ things, the programme helped reinforce messages and provided refined detail of messages that they thought they had understood.

“Most of it was general knowledge for me but you learnt what was in stuff like fruit shoots.” (Cornwall, reunion session 3)

“To be totally honest, I had a fair idea of what healthy eating was before, both me and the children and my husband, well not so much my husband have always been big fruit eaters and I have always done meals that are basic, you know pork chops and veg. You know we don’t eat ready meals or anything like that, we eat kind of basic traditional types of foods. We do use cooking sauces, proper meat and veg. You know Cherry did point out the sugar and salt content and give us some ideas of recipes and things so it did point a lot of things out that I had already knew maybe it drilled the message a bit harder. ….I did more or less know.” (Cornwall, individual interview, 02)
The programme aimed to enhance confidence (self efficacy) through strategies to deal with specific problems such as fussy eating; the degree to which this was successful was dependent on attendance at all sessions. Some parents reported questioning the evidence and the conflict in messages which let them draw their own conclusions. This allowed them to maintain personal choice and increase their confidence in their own ability to make decisions. The programme also did not aim to deal with family and neighbourhood factors (macro environment) or other contextual factors such as those who had no social support. Controlling the environment outside the centres such as children being rewarded with sweets made it difficult for parents to maintain changes. Some parents reported that they were unable to implement changes because of other family members who were reluctant to change what they did.

The patriarchal structure of family may well have affected the ability of some parents being able to change family diet, some mothers reported struggling to get children to eat healthily as the male members of the family refused to do so and this modelling made change difficult. Other members of families that parents struggled with included grandparents, aunts and uncles whose priorities around healthy eating were also different. Older children were also seen as a barrier to trying to implement changes. Other mothers reported trying to make changes to their children’s diets even though they did not make the changes to their own; this made it harder to sustain the changes in their children.

“I struggle with the grandparents, that’s where I struggle. I got through to her about not giving him the sugary drinks but then I know I will put them into milk shakes so I told her to go back to squash watered down. I told her not to give biscuits in between so she bought him a lolly because I know you don’t want him to have a biscuit so we reduce the time we spend there now, it’s easier. I still see her but it is after a meal not before” (Cornwall, reunion session 1)

Some reported not being able to buy fresh fruit and vegetables and the fact that they could not afford to waste food by getting children to try new things.

“If money wasn’t an option we would eat better. It wouldn’t be vastly different but we would eat better. It would probably just be a better quality. I would be buying the strawberries, the blueberries, the cherries – things I really like but I don’t but cherries are about £4 a punnet and that was a treat and I would do that often. I tend to be a creature of habit I tend to cook the same dinners. It is a bit monotonous, I haven’t got the time to be creative.” (Cornwall, Individual interview, 01)

Many parents, across both Cornwall and London reported changing behaviours in salt and sugar consumption, juice drinking, types of snacks given to their children, being calmer at mealtimes, reducing portion sizes, and introducing small changes that they perceived as positive. So whilst there may not have had a measurable effect on the main outcome there was generally very positive feedback in both areas. The specific choices around what components of the intervention were implemented by parents may have been affected by their attendance at particular sessions or their reasons for attending in the first instance.

“My daughter’s so difficult, if she’s not eating I can’t get her even to taste, so I can’t use it. She won’t even put in her mouth, if I put it on her plate, she gets angry. I think we’re out too
much. I need to be more organised. Maybe I should stay at home more and concentrate more. I will start gradually from small things.” (London, phase 3).

“I think I was trying to overfeed her. Now the portion sizes are getting smaller and she’ll ask for me if she wants more. Even though it was in a little bowl, it’s now I think a more reasonable size and I’ve got to realise that her stomach is the size of her fist not the size of my fist. Although she does eat that much sometimes.” (Cornwall, phase 2)

“Always gives her daughter raisins once a day; after Cherry, she stopped giving at snack time and now only gives with mealtimes as she understood more about natural sugars.” (London, phase 4b)

During the follow-up discussions, it was clear that those parents with more complex lives were those that could not maintain changes.

“Maintaining changes – we have slipped back a bit. He has a healthy breakfast and a healthy lunch but he has slipped back a bit (what are you doing). By slipping back I mean I have let go a bit on the fruit and veg especially on the evening meal. By then I think what can I cook that is quick as by then I have had enough.”(Cornwall, Individual interview, 03)

“I have had a load of issues to deal with, I have had too much on my plate.” (Cornwall, Individual interview 03)

In contrast, those that did manage to make changes were motivated and had engaged in good strategies for general parenting techniques and the ability to say ‘No’. Those parents that were able to implement the changes had developed parenting strategies to manage lots of different behavioural issues; one parent in particular reported trying to stop juice drinking in a bottle but never managed to achieve the change as the child continued to want it.

5.6 Food policy development in centres

In the original study proposal it was intended that a major component of the intervention would involve developing food policies in centres to help create a more supportive food environment. However the degree to which centres were able to integrate and develop a food policy was affected by a number of factors largely beyond the control of this project.

There are major differences between Cornwall and Islington in terms of food provision in centres, which reduced the opportunity for policy development and made it particularly difficult to standardise the delivery of this part of the project in the two locations.

5.6.1 Differences in ethos

In Islington, the primary care trust had developed very elaborate and detailed proposals on healthy children centres which included detailed guidance on healthy eating etc and so were very supportive of the Cherry project’s involvement, even if ultimately the guidance was not effectively implemented at local centre level. This work was part of the PCT’s work to help children’s centres achieve ‘Healthy Children’s Centre status’. As part of Cherry, the intervention centres in Islington were given extra support by the research team to use the PCT audit tool. Although Islington PCT were happy to
share the audit tool with centres in Cornwall, much of it was beyond the scope of the food provision in Cornwall and therefore was considered not relevant.

5.6.2 Management changes

In Islington, although the idea of developing a policy was generally accepted, large scale changes in the management of children’s centres during the middle phase of the project ‘derailed’ any plans to develop and adopt policies in two of the centres. Commissioning of centre services also changed during the Cherry Project and so maintaining momentum for implementing a food policy across all intervention sites was difficult. For one centre in Islington,

“The centre develop their own practices – when the whole staff team is involved it does help but I think that we have now clustered we can share more. I think the CC are very, very different – only 4 of them are only run and managed by the council, others are voluntary organizations. The clustering has been since last year”. (London, CC Manager)

5.6.3 Differences in food provision

In Islington, one of the centres implemented a formal policy with another working part of the way towards a policy during the project. The need for a formal food policy to reinforce healthy eating messages across all service provision was greater in London because centres provide up to 3 meals a day for some children, as well as snacks. In Cornwall there were fewer centres that had child care provision and so less need to implement a formal policy.

In Cornwall there were no formal policies in place but healthy eating was generally underwritten in everything that centres did. There was an informal ‘healthy eating’ policy and all centres offered only healthy snacks at sessions that parents and children attended. This was part of the Local Authority Healthy Early Years provider criteria where healthy options are offered.

“I think we don’t have a formal policy, it is underwritten in everything that we do – we have fresh fruit and vegetables. We do other projects around healthy eating and growing. It is all geared around making choices, it is not banning things it’s about here are the alternatives – a balance, education, it happens through everything that we do.” (Cornwall, CC Manager)

All centres reported that they encouraged healthy eating however, staff also reported that they did not enforce this as it was considered more important to allow parents access to services and encourage their attendance than stopping them bringing in specific food items. A major barrier to implementing food policies was that staff were concerned about how to adopt a policy that might discourage some parents from attending centres if they were to be challenged for bringing in certain foods and drinks. This was a complex issue for staff, and required training on assertiveness and setting boundaries, some of which was covered in the Cherry staff training sessions.

The ability of specific centres therefore to reinforce the messages in line with the Cherry aims varied. Even though some of the Islington centres appeared to complete a formalization of a food policy during the course of Cherry, the degree to which this was implemented was not assessed. The pilot also did not allow for an evaluation of the effects of the policy alongside the more specific Cherry intervention. In both areas centre staff received training to help reinforce messages so whilst the
policy itself might not have contributed to the differences in effect, the staff support for the intervention was similar in both areas.

5.7 Other outcomes of the programme

Centre staff reported that they had learnt a lot about healthy eating from the training that they received. The portion size information was also being used by health teams so the learning was extended beyond the centres.

“The cookery book that has come out of it – people have found it really useful particularly our healthy colleagues – having that portion size information has been really useful and really easy to understand. We have given them some copies to keep – if we reduce the cost of that as a resource it would be really useful.” (Cornwall, CC Manager)

“As the health service is changing and contact with health visitors is increasing and now it gives them time to influence, if they had this easy to use resource that they know works they will use it. They really liked the way the Cherry cook book was laid out and found the parents can really easily see and get some ideas and try different things.” (Cornwall, CC Manager)

Parents also liked the social interaction created by the sessions.

“Opportunity to get together with parents – laughter – to get a bit of childcare I quite enjoyed coming up and we had a good old chat.” (Cornwall, Reunion session 3)

“I think maybe more recipe ideas, not necessarily making them, but talking about ideas of how you can cook things in a healthier way, yeah so you have a list of ideas, like ‘ok I can think about cooking things like that.” (London, reunion session, phase 3)

“I would like a teenage version please. A Cherry for 5-15 year olds.” (Reunion session 1 Cornwall)

5.8 Conclusion

The various methods of gathering information for the process evaluation have revealed a generally very positive view of the intervention. In particular, the feedback from parents indicated that most enjoyed the sessions, found them relevant and interesting, and helped them achieve various positive changes. The process evaluation also provided some valuable insights into differences between the study areas and variation in the effects of the different programmes. Key issues which emerged highlight the importance of the lead trainers, their professional background and the level of support that they were given. The organisation and nature of the children’s centre also has a major influence on how the intervention is delivered. It is also apparent that the types of parents that are recruited into the intervention are critically important in terms of both the delivery of the sessions and their impact.
Chapter 6 – Results: Outcomes at 6 months

6.1 Response rate at follow up

Overall there was a 77% response rate at follow up (n=304); 70% of intervention parents (n=139) and 85% of control parents (n=165) were successfully retained in the study (p=<0.001). In Islington, 72% of parents (n=146) and in Cornwall, 83% of parents (n=158) were followed up (p=0.03). Parents who were retained in the study were more likely to be older, by an average of 2.5 years (p=0.003), married or cohabiting (p=<0.001) and educated to a higher level (p=0.004) (table 6.1).

Table 6.1 Characteristics of responders vs. non-responders

<table>
<thead>
<tr>
<th>Demographic and family characteristics</th>
<th>Responders (n=304)</th>
<th>Non-responders (n=85)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents age (years)</td>
<td>33.5</td>
<td>31.0</td>
<td><strong>0.003</strong></td>
</tr>
<tr>
<td>Child age (months)</td>
<td>28.7</td>
<td>29.5</td>
<td>0.53</td>
</tr>
<tr>
<td>Number of children per family</td>
<td>1.8</td>
<td>1.9</td>
<td>0.32</td>
</tr>
<tr>
<td>Child order (1st child)</td>
<td>60.5</td>
<td>54.1</td>
<td>0.29</td>
</tr>
<tr>
<td>Children attending nursery (yes)</td>
<td>18.5</td>
<td>21.2</td>
<td>0.57</td>
</tr>
<tr>
<td>Child gender (female)</td>
<td>48.9</td>
<td>51.8</td>
<td>0.63</td>
</tr>
<tr>
<td>Parent gender (female)</td>
<td>96.8</td>
<td>96.5</td>
<td>0.89</td>
</tr>
<tr>
<td>Marital status (Married/cohabiting)</td>
<td>72.6</td>
<td>47.1</td>
<td>&lt;<strong>0.001</strong></td>
</tr>
<tr>
<td>Ethnicity (White British)</td>
<td>66.3</td>
<td>58.3</td>
<td>0.17</td>
</tr>
<tr>
<td>Employment status (working)</td>
<td>37.0</td>
<td>32.9</td>
<td>0.49</td>
</tr>
<tr>
<td>Benefits (any type received excluding child benefit)</td>
<td>71.5</td>
<td>77.7</td>
<td>0.26</td>
</tr>
<tr>
<td>Education (none/GCSE &amp; equivalent)</td>
<td>34.8</td>
<td>54.2</td>
<td></td>
</tr>
<tr>
<td>Educational level obtained (secondary)</td>
<td>20.1</td>
<td>10.8</td>
<td><strong>0.004</strong></td>
</tr>
<tr>
<td>Educational level obtained (university)</td>
<td>45.2</td>
<td>34.9</td>
<td></td>
</tr>
</tbody>
</table>

The main reason for losing families to follow up was being unable to contact them. Of those that withdrew, the most common reasons given were that parents were no longer interested (n=19) or were too busy (n=9) to take part (table 6.1.a.).
Table 6.1.a. Reasons for loss to follow up at 6 months

<table>
<thead>
<tr>
<th>Reasons for loss to follow up</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost contact</td>
<td>53</td>
<td>13.5</td>
</tr>
<tr>
<td>Withdrew</td>
<td>28</td>
<td>7.1</td>
</tr>
<tr>
<td>Illness</td>
<td>5</td>
<td>1.3</td>
</tr>
<tr>
<td>Language problems</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90</td>
<td>22.8</td>
</tr>
</tbody>
</table>

6.2 Diet of children by control and intervention groups at follow up

The analysis presented here is based on an intention to treat basis and has been adjusted for all outcomes that were significantly different between control and intervention groups at baseline. These variables were: child age, child’s nursery attendance, gender of parent, parental employment, and parental education, as well as the six parental scores (food involvement, food knowledge, food confidence, nutrition self-efficacy, parental stress and food fussiness). To demonstrate the effect of the fully adjusted analysis, tables with unadjusted crude values are initially presented for each of the sets of outcomes below.

6.2.1 Fruit and vegetable intakes

The results of the crude and fully adjusted analysis for the primary and secondary dietary outcomes are presented in tables 6.2 and 6.2a respectively. In the tables the actual values of any difference at follow up for the intervention and controls are presented separately. Differences in change from baseline to follow up between intervention and control group are also presented for the whole sample and by study location.

Overall children in the intervention group showed improvement in all fruit and vegetable measurements, increasing the weight of fruits and vegetables. Children in the intervention group increased the amount of fruit and vegetables they ate by 17.5g at follow up, a difference of 11.9g more than those in the control group. In general there was a positive difference in terms of the amounts (except for fruit weight excluding at least 1 juice) and types of fruit and vegetables consumed. However the differences were not high and had large confidence intervals ranging beyond zero indicating that the differences were not significant. Interestingly when stratified by location, the differences between intervention and control groups was much more apparent in Islington than Cornwall. In Islington children in the intervention group consumed nearly a portion (39.7g) more of fruit and vegetables and although the confidence intervals are very wide, the difference is significant. In Islington all the other measures of fruit and vegetable consumption (except number of types of fruits consumed) increased but were not significant. In contrast, in Cornwall the combined consumption of fruit and vegetables decreased by 13g and fruit consumption by 20g. To assess if there was a consistent difference across all the centres by their location, we then analysed the changes in fruit and vegetable consumption for each individual centre separately. Although there was considerable variation in the nature of change across all the centres, the intervention centres in Islington showed the greatest positive level of change.
6.2.2 5-a-day

A measure of whether children were eating ‘5 a day’ was calculated. Children were classified as meeting their 5-a-day requirements if they ate 200g or more of fruits and vegetables with a maximum of 1 portion coming from fruit juice (75g) and 1 portion of dried fruit (20g). Fruits and vegetables in composite dishes (e.g. pasta sauce) were included.

The proportion of intervention children who did not meet 5-a-day on any recall day (‘never’) reduced from 29% at baseline to 22% at follow up. The proportion of children eating 5-a-day every day stayed approximately constant at 20%. A Wilcoxon signed-rank test suggests that this change is only just non-significant towards better outcomes (p=0.078) (table 6.2b). When focusing exclusively on intervention group, a result of Wilcoxon signed-rank test suggested borderline statistically significant change towards better outcomes (p=0.05, not shown in the tables) however the difference in effect between the 2 groups (table 6.2c) was non-significant (Mann-Whitney-Wilcoxon rank sum test, p=0.24).

6.2.3 Sugary drinks and snacks consumption

All sugary drinks and snacks outcomes decreased amongst the intervention group, although not by large amounts, and the differences were not significant (table 6.2a). Intervention children decreased their soft drink consumption by 37.8ml more than those in the control group. Again when stratified by location, differences in sugary drinks consumption was much more apparent in Islington, where children significantly reduced their consumption by 65.8ml.
<table>
<thead>
<tr>
<th>Children’s dietary outcomes (crude)</th>
<th>Actual values of difference at follow up</th>
<th>Difference in change between INT &amp; CON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td>F&amp;V weight (g) (including ALL juice)</td>
<td>20.1</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>(-5.4, 34.5)</td>
<td>(-0.5, 17.2)</td>
</tr>
<tr>
<td>V weight (g) (including ALL juice)</td>
<td>6.8</td>
<td>-1.6</td>
</tr>
<tr>
<td></td>
<td>(-12.4, 24.8)</td>
<td>(-3.9, 52.3)</td>
</tr>
<tr>
<td>F weight (g) (including ALL juice)</td>
<td>13.3</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>(-10.8, 14.8)</td>
<td>(-2.8, 33.3)</td>
</tr>
<tr>
<td>F weight (g) (excluding &gt;1 portion juice)</td>
<td>26.2</td>
<td>24.3</td>
</tr>
<tr>
<td></td>
<td>(-10.8, 14.8)</td>
<td>(-2.8, 33.3)</td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>-0.03</td>
<td>-0.37</td>
</tr>
<tr>
<td></td>
<td>(-0.03, 0.71)</td>
<td>(-0.22, 0.89)</td>
</tr>
<tr>
<td>V intake (number of types)</td>
<td>0.02</td>
<td>-0.11</td>
</tr>
<tr>
<td></td>
<td>(-0.14, 0.39)</td>
<td>(-0.23, 0.54)</td>
</tr>
<tr>
<td>F intake (number of types)</td>
<td>-0.04</td>
<td>-0.26</td>
</tr>
<tr>
<td></td>
<td>(-0.02, 0.45)</td>
<td>(-0.16, 0.53)</td>
</tr>
<tr>
<td>Sugary Drinks (quantities, ml)</td>
<td>-6.5</td>
<td>19.9</td>
</tr>
<tr>
<td></td>
<td>(-68.1, 15.4)</td>
<td>(-86.1, 20.1)</td>
</tr>
<tr>
<td>Sugary Drinks (occasions)</td>
<td>-0.003</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(-0.14, 0.39)</td>
<td>(-0.34, 0.12)</td>
</tr>
<tr>
<td>Sugary Snacks (occasions)</td>
<td>-0.04</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>(-0.27, 0.00)</td>
<td>(-0.04, -0.03)</td>
</tr>
<tr>
<td>Sugary Drinks + Snacks (occasions)</td>
<td>-0.05</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>(-0.31, 0.02)</td>
<td>(-0.80, 0.09)</td>
</tr>
</tbody>
</table>
### Table 6.2a Adjusted analysis of children’s dietary outcomes

<table>
<thead>
<tr>
<th>Children’s dietary outcomes (adjusted)</th>
<th>Actual values of difference at follow up</th>
<th>Difference in change between INT &amp; CON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td>F&amp;V weight (g) (including ALL juice)</td>
<td>17.5</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V weight (g) (including ALL juice)</td>
<td>6.1</td>
<td>-1.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F weight (g) (including ALL juice)</td>
<td>11.4</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F weight (g) (excluding &gt;1 portion juice)</td>
<td>19.7</td>
<td>24.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>-0.30</td>
<td>-0.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V intake (number of types)</td>
<td>-0.07</td>
<td>-0.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F intake (number of types)</td>
<td>-0.23</td>
<td>-0.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary Drinks (quantities, ml)</td>
<td>-17.9</td>
<td>19.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary Drinks (occasions)</td>
<td>-0.05</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary Snacks (occasions)</td>
<td>-0.06</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary Drinks + Snacks (occasions)</td>
<td>-0.16</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

* Significant differences

### Table 6.2b Percentage of intervention children meeting criteria for 5-a-day

| Intervention (n=140) | Follow-up (%) | |
|----------------------|---------------|--|--|--|---|---|---|---|---|
|                      | Never | Sometimes | Always | TOTAL |
| Baseline (%)          |       |           |        |       |
| Never                | 48    | 36        | 7      | 91    |
| Sometimes             | 18    | 116       | 21     | 155   |
| Always               | 3     | 25        | 35     | 63    |
| TOTAL                | 69    | 177       | 63     | 309   |

---

90
### Table 6.2c Difference in effect on 5-a-day between groups

<table>
<thead>
<tr>
<th>Change in 5-a-day</th>
<th>Intervention</th>
<th>Control</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>From always to never (-2)</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Always to sometimes &amp; sometimes to never (-1)</td>
<td>22</td>
<td>21</td>
<td>43</td>
</tr>
<tr>
<td>No change (0)</td>
<td>155</td>
<td>84</td>
<td>199</td>
</tr>
<tr>
<td>Never to sometimes &amp; Sometimes to always (+1)</td>
<td>25</td>
<td>32</td>
<td>57</td>
</tr>
<tr>
<td>From never to always (+2)</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>160</td>
<td>140</td>
<td>309</td>
</tr>
</tbody>
</table>

### 6.3 Parental dietary outcomes at follow up

At six months follow up, parental dietary change was very mixed. Although fruit and vegetables intake increased more in the intervention than control group, these differences were extremely small and mostly not significant, and fruit intake actually decreased. Vegetable intake significantly increased by just over half a portion (44.2g) more in the intervention group than the control group. There was no change in fruit and vegetables diversity at follow up. It should be noted that none of the parental dietary analysis includes fruit juice, due to the methodology of data collection.

Intervention parents did not show any improvements in sugary drinks consumption, as the quantity decreased in the control group (table 6.3a). There was a small but significant decrease in portions of sugary foods consumed.

In contrast to the results for the child’s diet there were not such major differences by location of the sample. However parents in Cornwall increased their fruit and vegetable consumption more than in Islington and significantly reduced their consumption of sugary foods by almost a portion.
Table 6.3 Crude analysis of parental dietary outcomes

<table>
<thead>
<tr>
<th>Parental dietary outcomes (crude)</th>
<th>Actual values of difference at follow up</th>
<th>Difference in change between INT &amp; CON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td>FV intake (grams)*</td>
<td>22.7</td>
<td>-9.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F intake (grams)*</td>
<td>-10.0</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V intake (grams)*</td>
<td>33.8</td>
<td>-12.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FV intake (types)*</td>
<td>0.37</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary drinks (ml)</td>
<td>-80.7</td>
<td>-24.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary foods (portions)</td>
<td>-0.40</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6.3a Adjusted analysis of parental dietary outcomes

<table>
<thead>
<tr>
<th>Parental dietary outcomes (adjusted)</th>
<th>Actual values of difference at follow up</th>
<th>Difference in change between INT &amp; CON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td>FV intake (grams)*</td>
<td>0.8</td>
<td>-9.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F intake (grams)*</td>
<td>-33.1</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V intake (grams)*</td>
<td>31.9</td>
<td>-12.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FV intake (types)*</td>
<td>0</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary drinks (ml)</td>
<td>9.8</td>
<td>-24.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugary foods (portions)</td>
<td>-0.54</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference

6.4 Other parental outcomes at follow up

In addition to the parental dietary measures, an assessment was also made of any change in a range of intermediate outcomes assessing parental food knowledge, confidence etc. Again an intention to treat analysis was undertaken, initially unadjusted and then adjusting for variables found to be significantly
different at baseline, namely: child age, child’s nursery attendance, gender of parent, parental employment, and parental education.

Minimal change was found for these parental scores with the differences being very small and in most cases not significant (tables 6.4 and 6.4a). However there was a small but significant increase in overall food knowledge, and in particular for parents from Cornwall. There was also an overall significant increase in food confidence which was most apparent amongst Islington parents. Otherwise there were very few difference in changes observed by study location for these outcomes.

Table 6.4 Crude analysis of other parental outcomes

<table>
<thead>
<tr>
<th>Parental scores (crude)</th>
<th>Actual values of difference at follow up</th>
<th>Difference in change between INT &amp; CON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td>Food involvement</td>
<td>-0.07</td>
<td>-0.16</td>
</tr>
<tr>
<td>Food knowledge</td>
<td>0.58</td>
<td>0.28</td>
</tr>
<tr>
<td>Food confidence</td>
<td>0.89</td>
<td>0.23</td>
</tr>
<tr>
<td>Nutrition self-efficacy</td>
<td>0.48</td>
<td>0.44</td>
</tr>
<tr>
<td>Food fussiness</td>
<td>-0.56</td>
<td>0.55</td>
</tr>
<tr>
<td>Parental stress</td>
<td>-0.46</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Table 6.4a Adjusted analysis of other parental outcomes

<table>
<thead>
<tr>
<th>Parental scores (adjusted)</th>
<th>Actual values of difference at follow up</th>
<th>Difference in change between INT &amp; CON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intervention</td>
<td>Control</td>
</tr>
<tr>
<td>Food involvement</td>
<td>-0.10</td>
<td>-0.16</td>
</tr>
<tr>
<td>Food knowledge</td>
<td>0.57</td>
<td>0.28</td>
</tr>
<tr>
<td>Food confidence</td>
<td>0.78</td>
<td>0.23</td>
</tr>
<tr>
<td>Nutrition self-efficacy</td>
<td>0.54</td>
<td>0.44</td>
</tr>
<tr>
<td>Food fussiness</td>
<td>-0.75</td>
<td>0.55</td>
</tr>
<tr>
<td>Parental stress</td>
<td>-0.45</td>
<td>0.20</td>
</tr>
</tbody>
</table>
* significant difference

6.5 Clustering - Intra-cluster correlation

To calculate a sample size for any future definitive trial it is necessary to both estimate the effect size of the intervention on different outcomes and to assess the intra cluster correlation (ICC) to determine the clustering effect of the study design. ICC values were calculated for the primary and secondary outcomes for complete cases only (subjects with complete data at baseline and follow-up) without any adjustment. Table 6.5 shows ICC values for the children’s dietary outcomes as these are the key outcomes likely to inform any future sample size calculation.

For fruit and vegetable, and sugary outcomes (continuous) assessing quantity of consumption, the ICC values were very low ranging from 0.003-0.02. The child diet outcomes assessing diversity and number of occasions consuming items, the ICC values were low/moderate ranging from 0.009-0.04. None of the ICC values were however significant.

<table>
<thead>
<tr>
<th>Children’s dietary outcomes Complete cases – crude analysis</th>
<th>ICC</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;V weight (g) (including ALL juice)</td>
<td>0.005</td>
</tr>
<tr>
<td>V weight (g) (including ALL juice)</td>
<td>0.003</td>
</tr>
<tr>
<td>F weight (g) (including ALL juice)</td>
<td>0.015</td>
</tr>
<tr>
<td>F weight (g) (excluding &gt;1 portion juice)</td>
<td>0.006</td>
</tr>
<tr>
<td>FV intake (number of types)</td>
<td>0.03</td>
</tr>
<tr>
<td>V intake (number of types)</td>
<td>0.01</td>
</tr>
<tr>
<td>F intake (number of types)</td>
<td>0.04</td>
</tr>
<tr>
<td>Sugary Drinks (quantities, ml)</td>
<td>0.020</td>
</tr>
<tr>
<td>Sugary Drinks (occasions)</td>
<td>0.020</td>
</tr>
<tr>
<td>Sugary Snacks (occasions)</td>
<td>0.009</td>
</tr>
<tr>
<td>Sugary Drinks + Snacks (occasions)</td>
<td>0.005</td>
</tr>
</tbody>
</table>
6.5.1 Effect of clustering on dietary outcomes – multilevel analysis

To determine the effect of clustering on dietary outcomes, a random effect multilevel model was used. This multilevel analysis showed that when compared to the standard regression model, while the confidence intervals changed, this was only by 1 percentage point and the effect size remained the same for the different dietary outcomes. To illustrate this point, a comparison is made between these two models using children’s fruit and vegetable weight consumption (table 6.5.1).

Table 6.5.1 Sample multi-level analysis

<table>
<thead>
<tr>
<th>F &amp; V weight</th>
<th>Standard regression</th>
<th>Multi-level analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude</td>
<td>22.3 (-3.2, 47.8)</td>
<td>22.3 (-3.1, 47.7)</td>
</tr>
<tr>
<td>Adjusted</td>
<td>17.7 (-11.7, 47.0)</td>
<td>17.6 (-12.5, 47.6)</td>
</tr>
</tbody>
</table>

6.6 Summary of results at follow up

Overall there was a 77% response rate at follow-up. For the primary and secondary children’s dietary outcomes no significant differences were found between the intervention and control groups. However there was a general and consistent trend of an increase in fruit and vegetable and reduction in sugary foods and drinks. Some differences were apparent by study location. In Islington children significantly increased their fruit and vegetable consumption by almost a portion (39.7g) and decreased their sugary drinks consumption by 65.8ml. Very little significant change was found for the parental dietary and other outcomes. ICC values for the child’s dietary outcomes were found to be low.
Chapter 7 – Discussion, Conclusions & Recommendations

7.1 Project aims and objectives

The overall aim of this study was to develop and pilot a family-centred nutrition intervention delivered in children’s centres across Islington and Cornwall. Based upon the Medical Research Council (2008) guidance on the development and evaluation of complex interventions, the specific objectives of the study included:

1. To investigate using a combination of qualitative and quantitative methods in samples of parents/guardians and children centre staff, the factors influencing pre-school children’s diets and the preferred options for the development of an intervention to promote healthier eating practices
2. Based upon data gathered in the initial developmental phase, to develop a multifaceted nutrition intervention to be delivered in the setting of a children centre
3. To conduct an exploratory randomised controlled trial, with an embedded process evaluation to evaluate the feasibility, acceptability and to estimate the effect size of the intervention
4. To make recommendations on the conduct of a definitive randomised controlled trial of a multi-centre early years nutrition intervention

7.2 Summary of key findings

7.2.1 Development phase

Prior to conducting the exploratory trial, considerable time and effort was directed at engaging with the early years services in both study areas. Establishing good links with the different local stakeholders and, in particular the children’s centre staff, was immensely valuable in gaining an understanding of the needs for, and diversity of, early years services provided in each area. Based upon discussions with both early years professionals and parents/guardians, it was very evident that there was considerable enthusiasm and interest in the proposed nutrition intervention. Although a range of food-related activities were already taking place in many children’s centres, the limitations of these activities was evident. The existing activities were often fragmented in nature, lacked a clear strategic vision and were frequently poorly resourced. It was also evident that some children’s centers struggled to fully engage with parents around food-related activities, particularly the more vulnerable families, resulting in poor attendance. Many activities focused on supporting breast- and infant feeding, with less emphasis placed on promoting good nutrition amongst older children aged 2-4 years in the years leading up to starting primary school. A clear need for a more comprehensive and tailored nutrition intervention was therefore demonstrated in the early stages of the study.

The focus groups and questionnaire surveys undertaken with samples of parents/guardians and centre staff in both study areas provided more detailed evidence to inform the development of the intervention programme. The qualitative data highlighted the wide and diverse range of factors that influenced parents’ decisions and practices, in terms of feeding their young child (Hayter et al., 2012). Parental accounts were primarily concerned with dealing with the practicalities of modern life, in particular the cost of food and the need to manage on a restricted household budget. Time pressures, a lack of perceived knowledge and confidence in preparing foods, and managing conflict between family members were also strong themes. The qualitative data also highlighted how parents used a range of coping strategies to deal with these often challenging circumstances. A key finding from the
focus groups was the need to help parents practically to further build their confidence and self-efficacy.

The questionnaire survey with parents provided further valuable data to inform the intervention. Reinforcing the data from the focus groups, the questionnaire survey highlighted the range of important factors influencing parents’ food choices (Ohly et al., 2012). In general the healthiness, taste, freshness and overall quality of foods were all seen as key factors influencing parental food choices. It was interesting however that the less educated parents particularly stressed cost concerns and very practical issues, as well as the familiarity of food to the child, the food being liked by the whole family and the affordability of foods. The survey data also identified that a significant proportion of the parents wanted more advice and support to help their child eat well. The parents highlighted a range of preferred options for future support including recipe ideas for young children, practical ways of encouraging children to eat well and overcome fussy eating habits. The least popular option was home-based support for parents; while those that wanted it were very keen on it, 50% said they definitely would not want to be visited at home. Again, less educated parents identified more practical priorities for future interventions to encourage healthier eating for young children.

The questionnaire survey with the centre managers highlighted the major difference in how early years services were offered in each area and as a consequence how this influenced the provision of meals in the centres. Although the managers reported that a range of food-related activities were already taking place in their centres, the majority were very supportive and enthusiastic towards the proposed Cherry programme and its different components. There was a diverse range of views in relation to the merits or otherwise of providing home-based nutrition support for families; although many managers thought it was a good idea in principle, they were unanimous that such support would not be feasible due to staffing issues. A mixed response was also expressed about the potential value of further developing food policies in centres, with centres in Cornwall much less keen than in Islington.

7.3 Exploratory trial phase
7.3.1 Recruitment and retention of sample

From September 2010 to November 2011 the study team successfully recruited 394 subjects into the trial. A carefully planned recruitment strategy was developed initially to maximise recruitment rates in both study areas. The recruitment was staggered over 5 waves and utilised a range of different methods to engage with potential subjects. The success of the recruitment was largely due to the hard work and determination of the main researchers (AH and HO), the support and assistance of the centre staff and the fact that a range of different recruitment methods were used. However nearly half the sample (46%) were, in the end, recruited through face to face contact at stay and play sessions at centres.

Although the inclusion/exclusion criteria did not explicitly specify low socioeconomic status, efforts were made to recruit families perceived to have higher levels of need. Certainly the vast majority of the sample were recruited directly through children’s centres, all of whom are located in more deprived neighbourhoods. The demographic profile of the sample at baseline (33% single parents; 64% not employed; 71% in receipt of means tested benefits; and 39% educated only up to GCSE level or equivalent) would indicate that the sample was broadly from a disadvantaged, or at least mixed, social background. We did, however, not recruit many young parents, as the mean age was 32.9 years.
Indeed the baseline measures of fruit and vegetable intakes were considerably higher than the NDNS data from recent similar population samples, suggesting that our recruited sample were more interested in nutrition than the general population. Participants involved in trials are often highly motivated individuals and this is a recognised limitation of randomised controlled trials (Black 1996).

At the 6 months follow-up, 304 subjects were retained in the study, a retention rate of 77%. This is a very satisfactory rate of retention for a community-based trial (Graffagnino et al. 2006). The retention of the sample was largely due to the concerted efforts made to maintain contact with the sample (e.g. sending text messages and reminder cards at 3 months) and the professional and accommodating approach of the researchers in organising follow-up appointments and the support of children’s centre staff.

7.3.2 Nature of intervention programme

In the original research proposal it was planned that the intervention would consist of three main components: centre-based nutrition activities for parents and children; home-based activities provided through outreach support from the centres; and food policy development and staff training in the centres. However both the qualitative and quantitative data gathered in the initial development phase of the study highlighted that many parents were not keen on the idea of having any home based support, particularly from individuals they did not already know (Hayter et al. 2012; Ohly et al. 2012). Also major differences were found in the adoption and use of food policy across both study areas. In Cornwall where the centres were far more ‘informally’ organised, meals were not served to children attending the centres. In contrast in Islington most centres did serve both meals and snacks, and the Local Authority in conjunction with the local Primary Care Trust were very enthusiastic in establishing a food policy as part of the promotion of a ‘healthy setting’.

As a result of this exploratory work, the nutrition intervention package that was finally developed comprised principally of centre-based activities. The four-week programme was carefully developed and planned based upon existing interventions and informed by the exploratory work with parents and centre staff. The Cherry programme was multifaceted in that it comprised of a mixture of practical activities for both parents and children, directly addressing the core themes of: healthy eating for young children and the whole family; goal setting; dealing with food refusal; food budgeting; and reading food labels. The practical activities were designed to engage parents in food-related activities and to increase their self-confidence around feeding their children. Each session also included guidance on a home-based activity (“Cherry at Home”) where parents were required to undertake a task before coming back to the following session. In addition to the 4 week Cherry programme, nutrition training for staff was offered to intervention centres, and in Islington, support was also given in developing food guidelines for each centre.

7.3.3 Feasibility and acceptability of intervention and evaluation methods

Useful insights were gained on the perceived acceptability and value of the intervention through information collected in the process evaluation. In general participants expressed very positive views of the intervention programme. In their feedback, participants praised the content and delivery of the sessions and reported that attendance had increased their confidence and understanding about healthy foods for children. The vast majority of participants reported that they enjoyed the sessions, learned new things and found the food activities very useful. Similarly positive comments were given in the
follow-up questionnaires with 89% of participants reporting that the programme was quite or very beneficial to them. The most useful session, according to parents, was that which covered practical ways of overcoming fussy eating. Parents reported a wide variety of ways in which they had changed their child’s diets; nearly half (48%) of parents reported using the Tiny Tastes charts at home and reported that it was useful in encouraging their child to try new fruits and vegetables. Criticisms of the intervention focused mainly on the ability of the tutors and the format of the sessions which some considered were too short and therefore rushed. Others felt that the course content was too basic and patronising. The intervention also appeared to have less of an effect on the parent’s diets which is not entirely surprising as all the activities focused on promoting positive changes in child nutrition.

The process evaluation also revealed that attendance at the Cherry sessions was rather mixed with just over a third (37%) of participants attending all four sessions of the programme. A range of reasons were given for not being able to attend more sessions but the main reasons were being too busy or illness in the family.

A concern with trials is the potential excess burden placed on participants in terms of the need to complete data collection on all outcome measurements. In nutritional research this can be a particular problem with the very time consuming nature of repeat 24 hour recall methods. However in this study participants appeared not to be overly concerned by the time and hassle taken to complete the evaluation measurements. The 77% retention would also tend to support this point.

Overall therefore the process evaluation would indicate that the study design and methodology was feasible and acceptable to the majority of participants.

### 7.3.4 Effect of intervention on primary and secondary outcomes

As an exploratory trial it is important to note that this study was not powered to detect significant changes in dietary and other outcomes. However some interesting findings were found. Overall the changes in all outcomes were very modest and in the majority of cases not significant. In relation to the children’s dietary outcomes there was a consistent change in the desired direction with increases in the quantity and diversity of fruit and vegetables, and a reduction in the quantity and number of times sugary drinks and foods eaten. Interestingly when stratified by study location, greater changes were found in Islington compared to Cornwall. In Islington children in the intervention group consumed nearly a portion (39.7g) more fruit and vegetables than the controls in the fully adjusted analysis. In contrast, in Cornwall there was a modest decrease in fruit and vegetable consumption at follow-up. To further explore the variation in the intervention effect by location we analysed the changes in fruit and vegetable consumption by individual children’s centre. Although there was considerable variation, the Islington intervention centres mostly showed the greatest positive level of change.

What explanations are there for this apparent difference between Islington and Cornwall? We can confidently assert that these differences were not caused by some systematic measurement bias as a standard protocol was used to collect baseline and follow-up data in both sites. Also the contents of the Cherry programme followed a standard manual so there was only limited variation in what was covered in each area. At baseline dietary measures were also very similar in both Islington and Cornwall. The process evaluation sheds some light on the possible reasons for the difference. The nature, professional background and training style of the trainers may have had an effect. One trainer
had a professional background in nutrition and may have been better equipped to deliver the programme. Although members of the study team provided support to the trainers in both areas, perhaps more intensive support should have been offered to the lead trainer in Cornwall. Also the types of parents who participated in the sessions may have affected the impact of the intervention. In Cornwall a larger number of participants were referred by either centre staff or health professionals, whereas in Islington the majority were recruited through stay and play sessions or in the centre nursery. It is possible that more of the parents in Islington were receptive and amenable to the intervention than in Cornwall. Lastly, the general organization and nature of the centres in Islington with the greater emphasis placed on integrated food and health policies may have contributed to the differential effect of the intervention.

The intervention had very limited effect on parental outcomes, either measures of dietary intakes or the range of intermediate outcomes assessing food knowledge, confidence and associated measures. Although it is perhaps not surprising that very few significant changes were found in the parental dietary outcomes, some more change could have been expected on the other parental measures as they are intermediate measures that may have changed prior to any changes in behaviours (Nutbeam 1998).

Finally, the intra cluster correlations for the children’s dietary outcomes that assessed the quantity of fruit and vegetable, and sugary drinks consumption were very low ranging from 0.02-0.003.

7.3.5 Comparison of findings with other studies

Despite the widespread endorsement of the Medical Research Council (2008) guidance on complex interventions, very few exploratory trials are reported in the scientific literature. It is therefore difficult to compare the findings of this study with directly comparable research. Recent trials in nursery settings have shown significant increases in fruit and vegetable but no effects on sugary drinks consumption (Bayer et al. 2009; De Bock et al. 2012). A very recent trial conducted in north London of a home based food exposure intervention that used different incentives (very similar to the Tiny Tastes element of our intervention), showed positive effects on liking and the consumption of vegetables (Remington et al. 2012). The follow up period was relatively short however. A very promising community based multi-setting and multi-strategy pre-school intervention in Australia, Romp & Chomp has shown positive long term effects on both anthropometric and dietary outcomes (de Silva-Sanigorski et al. 2010). The intervention comprises a comprehensive package of strategies focused on community capacity building and environmental changes to increase healthy eating and active play in preschool educational settings.

7.4 Strengths and weaknesses of the study

It is important to consider both the strengths and weaknesses of this challenging three year study. One of the major strengths of the research which undoubtedly facilitated the successful overall conduct of the work, was the extensive and prolonged local engagement with various stakeholders. The research team at both study sites invested considerable time meeting with and explaining the details of the work with early years professionals and, in particular, children’s centre staff. This local embedding of the study improved communication and dialogue, and most certainly helped with both the recruitment of the centres and study sample.
The extensive exploratory research, both qualitative and quantitative was also a really important initial part of the study. The focus groups, individual interviews and questionnaire surveys with parents/guardians and centre staff in both areas gathered immensely valuable information on the food and nutrition issues that were a cause for concern and views on how best to tackle these problems. The iterative process of consulting with the relevant groups and seeking their views and perspectives greatly assisted the development of the Cherry programme. Through this process the intervention was grounded in the realities of the parents and staff, and therefore more relevant and appropriate to their needs and circumstances.

Many studies encounter major difficulties recruiting their intended sample. In this study the recruitment strategies proved to be very successful in attracting the desired number and type of participants needed. A range of different recruitment approaches were used in the two contrasting study areas, but almost half the total sample (46%) were recruited through face to face contact at stay and play sessions. Our experienced research team used skillful communication techniques to approach and talk to subjects. We also managed to retain 77% of the recruited sample at 6 months follow up, which again reflects well on the rapport and trust that was developed between the researchers and participants.

Through the extensive developmental work, a thorough search of the published and grey literature, and a detailed focus on the theoretical basis of the intervention, a comprehensive and multifaceted nutrition programme was developed for delivery in the selected children’s centres. The four week programme carefully combined practical and applied activities for both parents and children, and included a range of components focusing on topics such as fussy eating, budgeting and food labels. The programme was reinforced by tailored staff training sessions in each centre and, where possible support on further developing food policies.

To fully evaluate the processes and outcomes of the intervention programme, a pluralistic evaluation strategy was developed and informed by a logic model (World Health Organisation 1998). The embedded process evaluation gathered information on aspects of the intervention delivery and implementation. A variety of research methods were used to gather data for the process evaluation to provide a comprehensive overall assessment of the acceptability and feasibility of the intervention. For the outcome evaluation, a complementary combination of outcome measures were used to assess fully any changes that may have arisen as a result of the intervention (Nutbeam 1998). Measurement protocols and various quality monitoring tools were used to assure the quality of the outcome data.

A final strength of this study was the effective collaboration that was established amongst the multidisciplinary research team which provided a wealth of complementary perspectives and skills. Across the two diverse and distant research sites, the team developed very effective working methods with clearly defined roles and responsibilities. Good communication was maintained across the entire study period which ensured that project milestones were met as planned.

Inevitably this study has some weaknesses that need to be acknowledged. Although the study team recruited the desired sample size and no explicit recruitment criteria was specified in terms of the social background of participants, it would have been preferable if a more disadvantaged sample had been recruited. The final sample were socially mixed but were generally interested and motivated in terms of child nutrition (as shown in baseline fruit and vegetables). A more vulnerable sample of individuals in greater need of nutritional support would have benefitted considerably more from the intervention. However recruiting and retaining vulnerable individuals is extremely difficult in clinical
trials particularly when there is a heavy respondent burden as is the case with nutritional research, with the need for time consuming and multiple repeat 24 hour recall interviews.

Based upon the findings of the NICE Review (NICE, 2008) and other public health guidance, the original plan for the intervention was to evaluate a multi-component nutrition programme aimed at developing the skills, confidence and self-efficacy of the parents through centre-based support, and in the home environment, through support from outreach workers. In addition, a focus on developing a more health-promoting children’s centre through the implementation of food policies was planned; this was designed to create a more supportive physical and social environment for good nutrition. As explained above, these plans were not fully realised, thereby limiting the scope of the intervention to a certain extent. Added to this, although the team attempted to use a theoretical approach in the intervention development and planning, this was not fully achieved.

Lastly as an exploratory trial, the process evaluation is of major importance in understanding the nature and acceptability of the intervention and its implementation. Although the team did gather considerable information as part of the process evaluation, the majority of the study resources were devoted to the outcome evaluation, particularly the collection of the baseline and follow-up data. A more carefully developed and detailed plan for the process evaluation should have been devised in the early stages of the study, rather than the iterative process that was undertaken. It would have also been useful to have a more comprehensive and detailed evaluation of the participant’s views and experiences of each of the Cherry sessions. However a balance is needed to avoid over burdening participants with excessive questioning.

7.5 Conclusions

1. The initial development stage of this study has demonstrated that there is a need and indeed enthusiastic demand from both parents and staff for a comprehensive nutrition intervention in children’s centres across Islington and Cornwall.

2. The process evaluation has shown that the nutrition intervention we developed and implemented was acceptable to both parents and centre staff, and its delivery and implementation was feasible in a centre setting.

3. The exploratory trial demonstrated the feasibility of recruiting and retaining a diverse sample of participants into this study.

4. The trial methodology also showed that the randomization process, measurement tools and follow-up procedures were all suitable and acceptable to study participants.

5. The intervention had a consistent beneficial effect on a variety of children’s dietary outcomes but these changes were mostly not significant. The intervention was more effective amongst children attending centres in Islington than Cornwall. The intervention had minimal effect of parental dietary and other outcomes.

7.6 Recommendations for further research
Based upon the findings of this exploratory trial, the following recommendations on the conduct of a definitive randomised controlled trial are made:

1. **Importance of local engagement**
   It is absolutely essential that the first stage of any future trial involves a period of meaningful and sustained engagement with all local stakeholders in the study sites to establish the research within the local context. Although time consuming, this activity pays dividends in terms of future cooperation and support from early years staff and local communities and in achieving recruitment targets.

2. **Need for further exploratory research**
   Further exploratory research is needed to explore the most appropriate options in terms of designing the intervention. If the ultimate aim is to develop a multifaceted and multistrategy intervention that both develops individual capacity through a combination of centre based and home activities, and creates a more supportive early years environment for good health, more research is needed to design such a package. In particular how best to provide home based nutrition support that is acceptable, feasible and cost effective needs to be considered. More research is also needed on the best ways of implementing policy based activity in early years settings. The wide diversity of organizational structures and agencies working in the early years settings is a real challenge for food policy development.

3. **Recruitment strategies**
   The recruitment of parents into any future definitive trial will require a carefully planned and tailored recruitment strategy that uses a range of different approaches and techniques. Face to face recruitment with trained researchers is likely to be the most successful method of recruitment. A careful decision is needed on defining precisely the nature of the desired sample. A sample that is too diverse and varied in background and expectation may lead to problems in the delivery phase.

4. **Nature of intervention**
   Implementing a multifaceted intervention is challenging both in terms of delivery and evaluation but is essential to achieve meaningful and sustained changes in dietary behaviours. The different components of the intervention should be complementary and supportive of each other. It is also important that the intervention acknowledges the potential important role played by other family members. Any centre based interventions should be delivered by suitably trained and supported professionals, ideally with a nutritional background.

5. **Retention of sample**
   The retention of the study sample will require care and attention. Appropriate monitoring and evaluation systems should provide on going feedback on participant’s views of the programme. It is important where possible to be responsive and flexible to any negative comments. Practical issues such as the provision of suitable crèche facilities, the timing of sessions and how they are organised to ensure the active engagement of participants is essential.

6. **Conduct of trial**
   The methodology of any future trial should include an embedded process evaluation to gather information on the delivery and implementation processes. Appropriate monitoring and evaluation methods should be used to assess the acceptability of the different component parts of the intervention. The 24-hour recall method is a suitable and acceptable method for collecting dietary outcome data. If possible follow-up data should be collected 12 months post intervention.
7. Sample size

Based on the effect size in our fully adjusted intention to treat analysis and taking into consideration our ICC estimates, the sample size for a definitive trial with 80% power and 0.05 significance would be 1180 subjects per group with fruit/vegetable consumption as the primary outcome, or 630 subjects per group if sugary drinks were the selected primary outcome.

7.7 Dissemination of findings

Many research studies that take place are short-term, one-off projects which may be criticised for inadequately sharing information and study findings with stakeholders, in particular those study participants who give up their time to take part and who provide much needed data. Throughout the study, consultation with stakeholders and dissemination was seen as extremely important; a list of the key presentations and publications given as part of the study are summarised in appendix 17.

The final step in this study is, therefore, to share the results with a number of relevant people, including parents who have taken part at any stage or those who have expressed their interest in learning the results. A short summary of the results will be sent to the following people/groups in both study areas:

- all parents and guardians who took part, both intervention and control group
- all children’s centres (intervention, control and the remaining centres in each area)
- NHS Islington and NHS Cornwall
- Local Authorities
- Director of Early Years services

A copy of the recipe book used in Cherry will be sent to all children’s centres for them to use freely in the centres and distribute as they would like, as staff felt that this would be particularly useful.

More detailed results, including a copy of the final report, will be made publically available on the University College London website, for academics, members of the public, and any other interested parties to be able to download freely. A PDF copy of the Cherry trainer guide and the Cherry cookbook will also be available on the website so that others can deliver the Cherry programme in other early years settings. Finally, the research team will publish several more papers in scientific journals describing the study methodology, as well as the results of this work.
Acknowledgements

We would like to express our thanks to a wide range of people and organisations who contributed towards this project, giving their time, energy and expertise throughout this study.

All parents and children who took part in the study and gave up their time to provide important data.

Heads of children’s centres recruited onto the study for welcoming the study team into the children’s centres:

Islington
Suzanne Williams, Willow
Gilles Shewell, Bemerton
Simon Fry, Paradise Park
Dorothy Shepherd, Conewood Street
Trina Lynskey, Hungerford
Muriel Awais-Dean, Hornsey Road

Cornwall
Madeline Wells, Liskeard
Sarah Trubody, Torpoint
Eileen McConnell, St Austell & St Blazey
Susan Horton, St Just and Pendeen & St Ives
April Scott, Helston & Lizard Peninsula
Julie Pikesley, Falmouth
Jackie Trevaskis, Malabar (Truro)
Carol Matta, Perranporth

Other children’s centre staff members who helped with recruitment, attended the sessions and ran the crèches during the running of the programme

All 38 children’s centres in Islington and Cornwall who were willing to participate in the study and for their input in the initial phases of the project

Cherry tutors who delivered the programme:
Catherine Louis (Islington)
Edwina Lewis (Islington)
Lin Steptoe and Family Learning (Cornwall)

Volunteers who helped collect all of the dietary data (in alphabetical order):

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Suzanne Anderegg
Maleeha Azhar
Louise Barkla
Ashley Ecker
Erica Hocking
Hanna Matzner
Marie Murphy
Christina Nascimento
Antiopi Ntouva
Jess Porter

Cornwall
Anna Brough
Julie Cunningham
Yvette Medworth
Juliet Pealing
Kathy Redfern
Christopher Soper

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Islington
NHS Islington
Cambridge Education at Islington
Islington Healthy Children’s Centre team
Islington Early Years services

Cornwall
Cornwall Council
Cornwall & Isles of Scilly PCT
Royal Cornwall Hospitals Trust

Members of the Cornwall Cherry steering group, Cornwall:
Gareth Dix
Holly Hawkey
Julie Moseley
Kirsty Edlin
Leonie Loreilhe
Organisations who supported Cherry by providing resources:
Weight Concern for providing Tiny Tastes, 
Caroline Walker Trust for providing recipes and cook books, 
AIA8, Centre for Health Informatics and Multiprofessional Education for providing telecommunication support

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Louis Levy 
Sam Montel

We would like to give thanks to members of the project steering group and main research team (see names listed below) for the expert guidance and support. In particular Arabella Hayter and Heather Ohly for all their hard work and dedication over the last 3 years, Helen Crawley for nutritional advice, Liza Draper for advice in research methods and the exploratory phase, and Hynek Pikhart for statistical analysis. A special thank you to Ashley Ecker for her hard work during the data collection and intervention phase of the study and Louise Gregory for her work supporting the study team.

Members of the project steering group (in alphabetical order):

Ms Helen Cameron  Cambridge Education at Islington
Dr Lucy Cooke  Department of Epidemiology and Public Health, UCL
Dr Helen Crawley  Centre for Food Policy, School of Health Sciences, City University
Dr Liza Draper  School of Life Sciences, University of Westminster
Ms Arabella Hayter  Department of Epidemiology and Public Health, UCL
Mr Louis Levy  Department of Health
Dr Pauline McGlone  School of Biomedical and Biological Sciences, University of Plymouth
Dr Laurence Moore  DECIPHer, School of Social Sciences, Cardiff Institute of Society and Health
Mrs Heather Ohly  School of Biomedical and Biological Sciences, University of Plymouth
Dr Clare Pettinger  Faculty of Health, Education and Society, University of Plymouth
Dr Hynek Pikhart  Department of Epidemiology and Public Health, UCL
Dr Gail Rees  School of Biomedical and Biological Sciences, University of Plymouth
Professor Richard Watt  Department of Epidemiology and Public Health, UCL
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House of Commons (2012), 'The development of children's centres',

Indices of Deprivation 'Indices of Deprivation',


Medical Research Council (2008), 'Developing and evaluating complex interventions: new guidance', (London: Medical Research Council).
National Institute for Health and Clinical Excellence (2008a), 'Review 6: The effectiveness of public health interventions to improve the nutrition of 2 to 5 year old children'.
Parkinson, K.N. (2010), 'Do maternal ratings of appetite in infants predict later Child Eating Behaviour Questionnaire scores and body mass index?', Appetite, 54 (1), 186-90.


Talvia, S., Lagstrom, H., Rasanen, M., Salminen, M., Rasanen, L., Salo, P., et al. (2004), 'A randomized intervention since infancy to reduce intake of saturated fat - Calorie (energy) and nutrient intakes up to the age of 10 years in the Special Turku Coronary Risk Factor Intervention Project', *Archives of Pediatrics & Adolescent Medicine*, 158 (1), 41-47.


Teddstone, A., Aviles, M., Shetty, P., and Daniels, L. (1998), 'Effectiveness of interventions to promote healthy eating in preschool children aged 1 to 5 years: a review.', (65; London: Health Education Authority).


National Research Ethics Service
Camden & Islington Community Research Ethics Committee
REC Offices
South House, Royal Free Hospital
Pond Street, London
NW3 2QG

Telephone: 020 7794 0500 extn 36906
Facsimile: 020 7794 1004

25 August 2009

Professor Richard G. Watt
Professor & Honorary Consultant of Dental Public Health
Research Department of Epidemiology and Public Health, UCL
1-19 Torrington Place
London, WC1E 6BT

Dear Professor Watt

Study Title: Exploratory and developmental trial of a family centred nutrition intervention delivered in Children’s Centres and the home environment

REC reference number: 09/H0722/56
Protocol number: Version 1

Thank you for your letter of 18 August 2009, responding to the Committee’s request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a sub-committee of the REC. A list of the sub-committee members is attached.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see “Conditions of the favourable opinion” below).

The favourable opinion applies to the following research site(s):

<table>
<thead>
<tr>
<th>Research Site</th>
<th>Principal Investigator / Local Collaborator</th>
</tr>
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<tr>
<td>Islington Local Authority</td>
<td>Professor Richard G. Watt</td>
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</table>

Confirmation of approval for other non-NHS sites listed in the application will be issued as soon as local assessors have confirmed that they have no objection.

This Research Ethics Committee is an advisory committee to London Strategic Health Authority
The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England
Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk. Where the only involvement of the NHS organisation is as a Participant Identification Centre, management permission for research is not required but the R&D office should be notified of the study. Guidance should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
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<tbody>
<tr>
<td>Cover letter from sponsor/funder re. appraisal of proposal</td>
<td>Tamara Beckett, Food Standards Agency</td>
<td>28 August 2008</td>
</tr>
<tr>
<td>Letter from Sponsor</td>
<td>Cary Rigler, Interim Director of Procurement, Food Standards Agency</td>
<td>08 June 2009</td>
</tr>
<tr>
<td>Covering Letter</td>
<td>Version 1</td>
<td>16 June 2009</td>
</tr>
<tr>
<td>Protocol</td>
<td>C.I.s CV - Richard Watt</td>
<td>15 June 2009</td>
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<td>Investigator CV</td>
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<td>REC application</td>
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<td>16 June 2009</td>
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<tr>
<td>Compensation Arrangements</td>
<td>Zurich Municipal for UCL</td>
<td>01 August 2009</td>
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<tr>
<td>Peer Review</td>
<td>Appraisal of Research Protocols, Food Standards Agency</td>
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<tr>
<td>Compensation Arrangements</td>
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<td>01 August 2009</td>
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<tr>
<td>REC application</td>
<td>Revised version including amendments; not locked</td>
<td>19 August 2009</td>
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<tr>
<td>Participant Information Sheet: Project Development</td>
<td>Version 2</td>
<td>18 August 2009</td>
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<tr>
<td>Participant Consent Form</td>
<td>Version 2</td>
<td>18 August 2009</td>
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<td>Advertisement</td>
<td>Version 2</td>
<td>18 August 2009</td>
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<tr>
<td>Response to Request for Further Information</td>
<td>Covering letter</td>
<td>18 August 2009</td>
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<tr>
<td>Participant Information Sheet: Children's Centre Staff</td>
<td>Version 1</td>
<td>18 August 2009</td>
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</tbody>
</table>

This Research Ethics Committee is an advisory committee to London Strategic Health Authority. The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England.
Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

09/H0722/56 Please quote this number on all correspondence

Yours sincerely

Ms Stephanie Ellis
Chair

Email: katherine.ouseley@royalfree.nhs.uk

Enclosures:

- List of names and professions of members who were present at the meeting and those who submitted written comments
- Site Specific Approval Form
- "After ethical review – guidance for researchers"

Copy to:

Sponsor’s contact - Samantha Montel, Food Standards Agency

This Research Ethics Committee is an advisory committee to London Strategic Health Authority
The National Research Ethics Service (NRES) represents the NRES Directorate within the National Patient Safety Agency and Research Ethics Committees in England
A qualitative study exploring parental accounts of feeding pre-school children in two low-income populations in the UK

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Abstract

Good nutrition in the early years of life is essential, yet the diets of many pre-school children in the UK are known to be poor. Understanding the decisions parents make when feeding young children is very important in determining what type and nature of interventional support may be developed to promote good nutrition. The aim of this study was to explore using qualitative methods, parental perceptions of feeding their children in order to inform the development of a nutrition intervention. Focus groups (n = 33) and individual interviews (n = 6) were undertaken with parents, most of whom were attending children’s centres in two deprived populations from one urban (Islington, north London) and one rural (Cornwall) location in England. Accounts of feeding pre-school children were primarily concerned with dealing with the practicalities of modern life, in particular the cost of food and the need to manage on a restricted household budget. Time pressures, a lack of perceived knowledge and confidence in preparing food and managing conflict over food choices between family members were also strong themes. Parents commonly reported differences between how they would like to feed their children and the reality of what they were able to do in their circumstances. These findings suggest that the poor eating habits of many pre-school children may be less a case of parental ignorance but rather the product of a range of coping strategies. Designing an intervention which helps parents to build their confidence and self-efficacy, may enable them to make positive changes to their children’s diets.

Keywords: pre-school children, parent, qualitative methods, nutrition, community-based, childhood diet.

Introduction

Good nutrition in the early years of life is vitally important for a child’s development, growth and health. A poor diet, combined with low levels of physical activity, can have a significant impact on both a child’s immediate and longer-term health (World Health Organization 2003). Immediate health problems associated with a poor diet include overweight and obesity, anaemia and dental caries. Longer-term effects of a poor diet in early childhood can include an increased risk of certain cancers, heart disease and stroke, diabetes and osteoporosis (Webber et al. 1991). In the UK, levels of overweight and obesity are on the rise; the National Child Measurement Programme for England found that 22.6% of reception children (aged 4–5 years) and 33.4% of year 6 children (aged 10–11 years) were overweight or obese in 2010–2011 (The NHS Information Centre 2011).

Children’s diets in the UK are known to be poor, particularly among socially disadvantaged groups which contributes to health inequalities (Marmot 2005, 2010). Children from lower income families tend to have lower intakes of fruit and vegetables and...
higher intakes of non-milk extrinsic sugars (NMES; Nelson et al. 2007). The most recent data available for children aged 1.5 to 3 years from the National Diet and Nutrition Surveys demonstrated that this age group were not meeting the recommended minimum amounts of fruit and vegetables and exceeding the recommended amount of NMES (Bates et al. 2010, 2012). UK and international policies have highlighted the importance of focusing on the early years to tackle health inequalities.

Children spend their early years exploring and learning what, when and how much to eat. They decide their food likes and dislikes early in life, during which time there is a predisposition to develop neophobic tendencies (literally ‘fear of the new’; Cooke 2004; Scaglioni et al. 2008). While young children try to show a degree of autonomy in what they choose to eat, ultimately the responsibility of what a young child consumes lies with the parent or carer as they shape the food environment in which the child is raised. Patterns of eating are influenced by parental food preferences and beliefs, exposure to food, role modelling, media exposure and child/parent interactions around foods (St Jeor et al. 2002; Cooke 2004, 2007; Savage et al. 2007).

As parents have such a powerful influence over children’s early food experiences, it is important to understand what drives them to make their food decisions for their child. A number of qualitative studies have looked at parental food choices, particularly in low-income families with pre-school children, and have identified a range of factors as being influential; these include the cost of food, access to food, social relationships and psychological factors including feelings of control and self-efficacy as being influential (St John Alderson & Ogden 1999; Attree 2005; Lawrence & Barker 2009; Ventura et al. 2010; Chaidez et al. 2011; Pescud & Pettigrew 2012). In low-income families, practical decisions often take precedence in food choice (Attree 2005; Bates et al. 2010), for example, price is one of the greatest motivating factors in food choice, with ‘healthy’ foods frequently considered to be prohibitively expensive (Hildebrand & Shriver 2010).

Women have traditionally been the principal food providers for the family (Murcott 1983) but their role is changing as they are faced with increasingly complex and busy lives and this has begun to necessitate the introduction of time-saving solutions (Patrick & Nicklas 2005). Food is one area where the notion of ‘convenience’ has been introduced, particularly among low-income, lone-parent families (Attree 2005; Carnell et al. 2011). In a study of UK mothers exploring their routine food choices, convenience foods were seen as a way of saving time and money while still being able to fulfil the role of provider for their children and families (Carrigan et al. 2006).

Food can be used as a tool for discipline where parents choose foods as a bribe to promote good behaviour, to quieten and distract distressed children and to calm tantrums with a ‘quick fix’ (Charles & Kerr 1988; Baughcum et al. 1998; Carnell et al. 2011). Certain foods are used for ‘means-end feeding’, where a liked food rewards the consumption of less-liked foods (Carnell et al. 2011). This use of ‘instrumental’ feeding has been linked to maternal education level: lower levels of instrumental feeding are associated with higher levels of maternal education (Saxton et al. 2009). Non-food incentives may also be used to influence children’s food choices particularly of less well-liked foods (Remington et al. 2012).

Parents can foster or hinder the development of healthy eating patterns (Scaglioni et al. 2008). They

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**Key messages**

- Parental approaches to feeding pre-school children are shaped by practical considerations, social/familial influences and fussy eating behaviours, which are common at this age.
- The poor eating habits of pre-school children may be less a case of parental ignorance, but rather the product of a range of coping strategies developed in the context of modern life.
- There is a need to provide nutritional support for pre-school children and their families in a timely and sensitive manner, which aims to build parental confidence and self-efficacy.
can encourage the consumption of unfamiliar or previously disliked foods if children observe them eat a new food, teach them to trust new foods and reduce neophobic tendencies (Birch 1999; White et al. 2011).

In a large, population-based Swedish study, mothers who were neophobic were shown to present their children with fewer new and uncommon foods, thus projecting their own food preferences onto their children (Hursti Uk & Sjoden 1997). Foods that are restricted by parents such as snack foods may result in the unintended consequence of increasing their desirability to children (Fisher & Birch 1999).

Understanding how parents make decisions on feeding their young child is important in determining what type and nature of interventional support can be developed to promote good nutrition. The aim of this study was therefore to explore, in depth using qualitative methods, parents’ perceptions of feeding their children in two low-income populations (one rural and one urban) in the UK. A subsidiary question was to assess any potential differences between the two locations, which could affect the nature of support needed. The analysis focused on the reasons behind parental food practices for young children in order to inform the development of a nutrition intervention to be implemented in these two locations in the UK.

Methods

Study design

A qualitative study of parents attending children’s centres in two locations (one urban, Islington, north London and one rural, Cornwall) in England was undertaken between September and December 2009. Children’s centres are government-funded early-year settings where children under five and their families can receive integrated services and support, such as access to health and parenting services, advice and information on healthy lifestyles, training and return to work, and (in some areas) high-quality early years child care. The qualitative investigation was followed by a quantitative survey of a sample of parents using children’s centres in both areas. The results of the quantitative questionnaire survey are reported elsewhere (Ohly et al. 2012). Data from both investigations were used to inform the development of a nutrition intervention delivered in children’s centres across Islington and Cornwall (details and methodology of the intervention to be published separately). The study received full ethical approval from Camden and Islington Community Research Ethics Committee.

Study location and sample

Islington, an inner city London borough, and Cornwall, a rural county in South West England, were selected to provide two contrasting and diverse low-income populations in the UK, and to inform the development of a nutrition intervention for both populations. Sampling was carried out at two levels, by cluster (children’s centres) and individually within each centre. Based upon a subjective assessment of their level of engagement with nutrition-related activities (including how many nutrition courses the centre had run previously and whether a food policy was in place), a maximum variation sampling method was used to purposively select the children’s centres in each location (Patton 2002). This method ensured that four centres with different levels of prior experience in delivering nutrition activities were included in the study. As Cornwall has a significantly larger land area than Islington, as well as a large rural population, two additional selection criteria were used in Cornwall: centres were selected by geographical locality (one in the north and one the south of the county) and only centres serving rural populations were included in the sample. All of the selected centres in both Islington and Cornwall were located in areas of multiple deprivation (Indices of Deprivation 2010).

Within each children’s centre, individual participants were recruited through posters displayed in the reception areas and through the help of centre staff who approached parents using the centre facilities. While no demographic or socio-economic data were collected from participants, all children’s centres were located in deprived areas, which target deprived families and a particular effort was made to invite parents who centre staff considered to be vulnerable, in need of support or socially isolated. All participants were able to communicate effectively in English and had
children aged between 18 months and 5 years. As an incentive to participate in the focus groups, all parents were offered the opportunity to enter a prize draw to win £40 worth of high street vouchers. All participants signed a consent form prior to participating in the discussion groups.

Data collection

Data were collected through four focus group discussions, which took place in the selected children’s centres in each location and four additional individual family interviews conducted in Cornwall. Each focus group was led by a facilitator (GR/PMc/RW) and one assistant (AH/HO), and lasted an average of 54 min.

A topic guide was initially developed by the research team and piloted with a group of 12 parents of young children to assess its suitability and clarity. Following the piloting, minor amendments were made to the guide. Open and semi-structured questions were used to explore parental accounts of the factors influencing their children’s eating habits, their perceptions of feeding their children and any challenges they faced on a day-to-day basis. They were also asked what their children’s ‘typical’ diet consisted of in order to put these concerns into context. Each focus group began with a modified version of ‘Circle Time’ (Mosley 1998). Participants were shown examples of processed foods and drinks specifically marketed at young children and asked to discuss their views on these items. This process has been used successfully in other focus groups to generate effective group participation (Warren & Lundman 2004).

In Cornwall where some families live in very remote areas and have problems accessing local services such as children’s centres, individual interviews were also conducted. Interviews were arranged by a health visitor, who then accompanied the researcher (HO) to the participants’ homes; this allowed parents who did not wish to attend a children’s centre but wished to take part in this study to be included. The same questions were used for both the individual interviews and focus groups, with the addition of some questions in the individual interviews on accessibility to services and support.

Analysis

Interviews were digitally recorded (audio only) and transcribed verbatim by one researcher (AH). Transcripts were checked for quality, coded, entered into Microsoft Excel. The data were analysed using framework analysis, the main focus of which is to keep the integrity of accounts rather than to ‘fracture’ the data (Ritchie & Spencer 1994; Green & Thorogood 2004). Framework analysis involves five distinct but interconnected stages of analysis: familiarization of the data, identifying and creating a thematic framework, indexing, charting and mapping and finally interpretation (Ritchie & Spencer 1994). This method is designed specifically for use in applied research and is both a deductive and inductive process thereby enabling the research questions to be examined but does not preclude the emergence of new and unexpected findings.

Initially, thematic codes were created deductively, which were generated from the questions participants were asked (for example, ‘factors influencing child’s diet’). On indexing the data, additional specific codes emerged (e.g. cost, time and food marketing) and were used to generate subcategories inductively. Qualitative analysis is an iterative and reflexive process; therefore, the framework was updated to fit the data throughout the analysis (Dawson et al. 1993; Ritchie & Spencer 1994; Green & Thorogood 2004). This process is valuable because it allows themes to be clearly identified both within, and across interviews. In line with Critical Appraisal Skills Programme quality guidelines (Public Health Resource Unit 2006), the framework was checked by a second researcher (HO) to ensure that no relevant data were inadvertently or systematically excluded, nor any irrelevant data included (Law et al. 1998; Graneheim & Lundman 2004).

Results

Participants

Two focus groups were held in children’s centres in each location with a total of 33 participants (Table 1). In addition, four family interviews were conducted with six participants in Cornwall who were not chil-
dren’s centre users. All 39 participants, three of whom were fathers, were parents of young children aged 18–39 months. All parents who were approached agreed to take part. All of the focus group participants were from different households, while two family interviews were conducted with two parents from the same household (FI3 and FI4).

Key themes
The key themes to emerge from the parents’ discussions were sorted into categories (affordability of food; time constraints; supermarkets, food shopping and food marketing; lack of cooking skills and confidence; parental role modelling; family influences and challenges to parental practices; peer influences; fussy eating; food waste). Each theme is reported below and elaborated further with illustrative quotes. Parents reported various coping strategies, which enabled them to feed their children according to these circumstances; Table 2 lists these strategies and provides a summary within the context of each theme.

Affordability of food
Participants gave detailed accounts of the wide range of factors that influenced and constrained their decisions and choices in purchasing, cooking for and feeding their young families. Parents were acutely aware that they were often unable to afford food and the need to manage on a limited budget was a recurrent and dominant theme, for which a number of coping strategies were reported. One common approach was to forgo buying some foods in place of other unavoidable expenses such as nappies, rent and other household bills:

If I’ve got to spend £20 on nappies, the food has to suffer that week (IS1).

some weeks you have no money left . . . you still know the things you prioritise in your shopping trolley (FI3).

Treats for the children were seen as something that could be sacrificed if money was scarce:

Yeah we do [adapt our shopping], it’s like if we’ve got a good week we do normally buy the kids treats and everything like that, but if we haven’t then they don’t get it (FI3).

There were foods that parents would like to buy but they felt they could not afford, for example, particular cuts of meat and fresh fruits and vegetables:

We can’t afford to eat fresh meat every day . . . Just proper cuts of meat would be nice, from the butchers, but we have to settle for Morrisons . . . value foods (FI2).

Because we get paid monthly, so the week before it’s pay day we’re really skint and it’s like running the cupboards and freezer down . . . so obviously for last three or four days, I don’t go out and buy fresh fruit and veg for those few days, so it’ll be anything . . . that’s left (IS1).

Many parents had a perception that ‘healthy food’ was too costly, for example:

Having fresh fruits and vegetables on a daily basis is expensive (CW1).

And while they would like to give fruit and vegetables everyday, they could not afford to. In contrast,
some parents thought that fruits and vegetables were among the cheaper foods to buy, but these tended to be parents who had access to cheaper local markets in Islington, for example:

The guys that sell the fruit for a pound ... they’re great (IS2).

Parents also reported making menu plans and weekly shopping lists to make their money go further in order to know exactly what they were cooking everyday:

Every Sunday night we sit down and write out what we’re going to have that week ... it saves so much money (CW2).

Time constraints

Time constraints were mentioned frequently in both Cornwall and Islington; parents expressed conflict between knowing what they would like to do to provide food for their children and what they were able to do within the confines of busy, working lives. Preparing food from scratch suffered as a result of time pressures:

I work three 12 hour shifts a week and by the time you get in ... I’d love to have things all prepared but I’m working, I’m so tired ... on a Wednesday when it’s my first day off I’m so exhausted from doing all those hours in three days that I try my best just to make sure, you know that I spend time cooking, but you don’t always get time to prepare (CW1).

Many of the parents interviewed had developed practical solutions to cope with the demands on their time, particularly for those who work; these included shortcuts when cooking, keeping mixed vegetables in the freezer:

<table>
<thead>
<tr>
<th>Theme</th>
<th>Accounts of feeding children</th>
<th>Parental coping strategies</th>
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<tbody>
<tr>
<td>Affordability of food</td>
<td>Food is expensive when on a tight budget</td>
<td>Prioritise essentials</td>
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<td></td>
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<td>Forego children’s treats</td>
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<td></td>
<td>Fresh fruit and vegetables and cuts of meat are expensive</td>
<td>Do not buy fruit and vegetables at end of the month</td>
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<tr>
<td>Time constraints</td>
<td>Not enough time to cook from scratch</td>
<td>Buy own brands and economy products</td>
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<td></td>
<td></td>
<td>Prepare food in advance on days off</td>
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<tr>
<td>Supermarkets, food shopping, food marketing</td>
<td>Supermarket promotions can provide useful savings</td>
<td>Buy whatever is on offer</td>
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<td></td>
<td>Shopping with children is stressful</td>
<td>Shop alone when possible</td>
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<td></td>
<td>Advertising aimed at children results in pester power</td>
<td>Leave children at home</td>
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<td></td>
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<td>Write shopping lists and do not deviate from them</td>
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<td></td>
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<td>Shop online to avoid promotions</td>
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<td>Lack of cooking skills and confidence</td>
<td>Lack of confidence is a barrier to cooking</td>
<td>Give children ready meals</td>
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<tr>
<td>Parental role modelling</td>
<td>Children copy adult behaviour</td>
<td>Parents eat healthier food to pass on habits to their children</td>
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<td>Eat together with children</td>
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<tr>
<td>Family influences, challenges to parental practices</td>
<td>Conflicting feeding styles of ex-partners</td>
<td>Try to ignore it</td>
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<td></td>
<td>Grandparents want to spoil children with unhealthy food</td>
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<tr>
<td>Peer influences</td>
<td>Children copy other children’s eating habits</td>
<td>Give similar food at home that children eat at nursery</td>
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<tr>
<td>Fussy eating</td>
<td>Children are fussy</td>
<td>Give in to it</td>
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<tr>
<td></td>
<td>Stressful and upsetting for parents and children</td>
<td>Ignore it</td>
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<td></td>
<td>Mealtimes feel like a battleground</td>
<td>Play games with food to make more appealing</td>
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<tr>
<td>Food waste</td>
<td>Children may not eat new foods</td>
<td>Do not buy new foods</td>
</tr>
<tr>
<td></td>
<td>Parents cannot afford waste</td>
<td>Give ready meals children are more likely to eat</td>
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That’s handy for stuff like shepherd’s pie, I just chuck in those mixed veg and that’s fine (IS1).

Preparing food in advance:
If you’ve got five minutes while someone’s having . . . a sleep or something like that, you can pre-cut the vegetables for later on that evening and things like that. So you don’t have to rush later and think, oh my goodness I want to cook this now I haven’t got the time to do it (FI1).

And sharing the cooking with a partner:
Oh he cooks sometimes but when it’s his turn he just thinks a takeaway is easier! (CW2).

Supermarkets, food shopping and food marketing
Shopping for food appeared to be a stressful, time-consuming activity, which parents repeatedly expressed their dislike for, particularly when they had to take young children with them. They reported family arguments, children having tantrums and feelings of frustration and annoyance:
I hate food shopping, I really hate it, it’s just really stressful and guaranteed . . . it puts me in a bad mood . . . it’s so boring, and my daughter hates shopping which doesn’t help, so it’s just a nightmare (IS1) and
It’s a nightmare, [the children] are always picking things off the shelf. I think with the kids I just want to hurry up, do the shopping and get home, because it’s just, it’s too much with her (FI4).

Supermarket promotions and food marketing had an effect on food shopping, some of which was positive, for example:
They have some good offers on at Tesco’s (FI4).

While other aspects made food choice more complicated. Parents suffered from ‘pester power’, with children trying to pressurise them into buying things which were not on the shopping list:
It’s harder when you take [the children] because they’re ‘I want this, I want that’ (CW1).

Some of this seemed to be directly as a result of advertising aimed at children. Of Haribo™ sweets, one parent said:
I think when [sweets are] obviously in the shops and advertising them and [the children] can see them, it makes it very hard obviously to get away from that with them demanding things like that (FI1).

Parents described reacting to this by making shopping lists, ensuring they were disciplined and stayed focussed by shopping for what they planned to buy and what they could afford, shopping online or by shopping alone to prevent their children being exposed to, and influenced by, supermarket advertising.

Cooking skills and confidence
Confidence and the ability to cook also had an influence on whether parents cooked, and the foods they provided for their families. Parents with a lack of perceived confidence tended to revert to ready-made, convenience foods rather than cooking meals from scratch:
The confidence I think could be [a barrier to providing healthy food], yeah, thinking, oh my goodness I’m going to mess that meal up, I’m going to go for the easy option (FI1).

Acquiring these skills seemed to be related to culture and upbringing; a few parents felt that they knew what foods were healthy and how to prepare them as a result of their childhood experiences:
My mum sure took good care of me, this is the same what I do with my children now (IS1).

This was more apparent in Cornwall:
We’re traditional, I like to spend a lot of time cooking. I’m always cooking (CW2) and ‘my mum used to cook all the time . . . so we know how to cook, it’s just I think a lot of it is down to laziness as well isn’t it? (FI4).

Parental role modelling
Parents saw themselves as role models for their children, recognizing that family eating habits (for example, parents eating the same foods as their
children and all eating together) were a way of modelling good eating behaviours and play a key role in what their children eat. It was generally agreed that parents should not expect their children to eat things that they would not eat, nor should they be allowed to eat food that they would not let their children have:

We want our children to have the best food and I’ve learned that children do copy us . . . when your husband is having chocolate it’s not fair to expect your child to have banana or fruit (IS1) and 

. . . my oldest, he wouldn’t eat because he was always like, ‘well why isn’t mummy eating?’ Like vegetables, if I don’t have peas, (I hate peas), if I didn’t have peas on my plate he’d be like ‘why haven’t you got them, I’m not going to eat them (CW2).

Parents reported changing their eating habits in an effort to act as good role models:

My husband and I have an addiction to cookies and everything bad. So because of [our son] we’ve started eating so much better (IS2).

**Family influences and challenges to parental practices**

Some parents expressed concern and frustration that their efforts to model eating behaviours and encourage their children to eat well were frequently undone by other family members, particularly ex-partners and grandparents. Parents reported other family members giving children unhealthy foods as a way of spoiling them, particularly those who did not see the children very often:

If they’re at their dad’s or their gran’s, they eat just junk food all the time, because they don’t like to say no, they like to spoil them as much as possible (CW2).

One parent said she had no authority around meal-times and that although she was strict with meals, other family members tended to do what they wanted:

The other day . . . it was only about half hour before tea and [the children’s father] went away and give them more biscuits and I was like, what’s the point in that? (FI3).

These differences in parental food choice caused conflict within families, particularly where two parents have different ideas about what they should feed their children or different eating habits:

My husband’s always moaning at me to stop giving them junk food, he blames every naughty thing that happens on junk food . . . it’s just a nightmare really (CW2).

This was particularly apparent between ex-partners:

I find it quite hard because I’ve just split up with my son’s dad but [his dad is] really fussy. He doesn’t eat any vegetables . . . so I think when my son goes round to see [his dad] he comes back being really fussy . . . (CW1).

Inconsistency between parents led to established routines being broken. One parent felt that she wished she could get back to her old routine because:

I can do things my way because my routine is fantastic. I’ve got it all in my head and I can just get on with (FI1).

While others were more resigned to it and accepted it would happen:

You kind of have to accept it to a degree . . . but keep within limits (IS2).

**Peer influences**

Parents across both areas described how their children’s eating habits were heavily influenced by other children, both positively and negatively:

Children, they just copy (IS1).

Children were encouraged to try new foods when they saw other children eating, particularly at nursery or school:

[my daughter] is eating a lot more vegetables now since she’s started school dinners because she’s seeing other children around her eating them (CW1) and she’s slightly better at school because they’ve got all their friends. And they’re all [eating], aren’t they? (CW2).

For some, this positive influence did not always translate into better eating practices at home:

You notice that your kids won’t eat stuff at our house, but when he goes to nursery . . . he’ll eat it (CW2) and

They come home [from nursery and say] I had mashed potato. And it’s sort of, did you like it? Yes, I want it at home now. Then you can try at home giving them mashed potato till the cows come home and you get nowhere. They say, I don’t like it (CW1).

Fussy eating

Fussy eating was discussed at length, with most parents across both sites reporting some kind of fussy eating by their children, for example:

They don’t really eat hardly anything (CW2). I can’t find a way where I can just give it to her and make her enjoy the fruits and veg (IS1), and she doesn’t eat dry food. But she wouldn’t eat a puree either. I couldn’t make her a puree, she wouldn’t eat it . . . she’d just fling it across the floor . . . (IS2).

There were various reasons for this fussiness, which included taste and texture:

She’ll eat lumps and bits but not lumpy food. She likes a smooth puree (CW2).

And whether foods were raw or cooked. Some children developed a desire to be independent as they got older and became fussier, where previously they had eaten a wide range of foods:

Unfortunately when my daughter hit about two she got ridiculously picky about what she would eat. It had to be something which she could pick up, so it would be chicken dippers and sausages and stuff. Everything else, won’t touch (CW1) and

Yes she is fussy now [when she didn’t use to be] because . . . in the past she used to eat the fruits and the apples and everything, now she’s more aware of different tastes she’s all of a sudden changed (IS1).

Across the sample, fussy eating made mealtimes stressful and tended to make them feel like a ‘battle-ground’ with both parents and children ending up upset. Parents reported children attention seeking, challenging parental authority, and wasting time resulting in long mealtimes:

It is quite a battle, because you want to give them the best of what . . . they should eat and what’s good for them . . . it’s hard, you can’t shove it in their mouth . . . because I’ve tried putting it in her mouth as we’re eating, and she’ll just spit it out again (IS1).

There was an overarching feeling that fussy eating was a continual frustration:

It’s down to their sheer determination to drive you mad . . . just because I can annoy you (IS2).

As well as a source worry for parents, in particular that their children might go without and be hungry as a result. In response to the problem, parents described a number of tactics that they employed to ensure that children would eat sufficiently, for example, playing games with food to make it more appealing:

My daughter prefers to have parmesan sprinkled on [broccoli] so she thinks it’s fairy dust . . . so she’ll eat it that way, but any other way she won’t touch it (CW1).

Or simply ignoring the issue:

You get a child that every time you sit down to a meal says ‘I don’t want that, I want this’. So in my house we have Hobson’s choice. This is what we’re having for tea, you either eat it or you leave it (CW1).

For other parents, succumbing to the demands of their children was easier than continuing to fight over food:

If he ain’t going to eat his dinner, he’s getting toast at least, just so he’s eaten something, and he knows that now, so I think he does that on purpose! (IS2).

Food waste

Parents voiced concerns about wasting food (and money) when they discussed ways of feeding fussy eaters on a limited budget. Some parents dealt with this by no longer giving children foods that they had previously refused to eat:

I’ll stop buying something if they spit it out once because we don’t want the waste (FI4).

Avoiding unfamiliar foods that their children might refuse to eat. Although some parents were keen for
their children to try new foods, this was not an option when budgets were too tight and wasting rejected food was unaffordable:

It’s like a money factor, you can’t just think, oh I’ll buy all that stuff because they might eat it . . . if I could write down a list of things I’d like my children to try, it would be great, but I just can’t afford that on top of my weekly shop as it is (CW2).

Parents who lacked extensive cooking skills would prefer to give their children ready-meals so that:

At least then the children are going to eat it and I haven’t wasted (FI1).

**Coping strategies**

Parents described a range of coping strategies, which enabled them to deal with the everyday challenges of feeding a young child. A summary of the main ways of coping are presented in Table 2, linked to the key themes emerging from the interviews.

**Discussion**

Good nutrition in early life is an important public health issue. Few studies have however explored in detail the factors that influence the decision and practices parents make in how they feed young children. The aim of this study was to explore the range of factors that parents of pre-school children identified as influencing their feeding practices. Focus groups and individual interviews were conducted with a sample of parents living in two contrasting areas of the UK, Islington an inner city London borough, and Cornwall, a rural county in the southwest of England.

The results of this study have highlighted that a wide range of complex and interconnected factors influence the decisions and practices parents make in terms of what, and how they feed their families. Parents provided detailed accounts of how environmental, social, family and individual factors all interact to affect their shopping, cooking and feeding practices as outlined in Table 2. From the open and frank accounts given by this sample of parents, feeding a pre-school child is not a simple choice based upon the provision of dietary advice and health information but clearly a far more complex process. Parents are faced with competing and conflicting demands and influences, many of which are beyond their direct individual control (for example, the cost of food), or are perceived to be (for example, the influence of other family members). Parents described a number of coping strategies, which enabled to them to ‘do the best they could’ given their circumstances. Although the study participants demonstrated a strong desire and wish to provide the ‘best’ for their child, the reality of their daily lives meant that this was not always possible. Parents described how they perform a complex ‘balancing act’ dealing and responding to a wide range of factors that ultimately determines what their child eats. An overriding factor influencing and indeed constraining parental food practices was the impact of living on a tight and restricted family budget, where cost seemed to override other factors, something which is especially pertinent in times of an economic downturn. A lack of money had a direct impact on the types of foods that could be purchased, for example, fresh fruit and vegetables, and also constrained certain practices such as offering their child new and unfamiliar food due to concerns over wasting rejected items. Previous studies with families on low incomes have highlighted the impact of restricted budgets on food choice (Dowler & Dobson 1997; Jain et al. 2001; Maubach et al. 2009; Sobal & Bisogni 2009). A lack of resources inhibits food choices and the ability to buy healthier or better quality foods, resulting in lower consumption of fruits and vegetables, increased snacking, as well as reluctance to experiment with new foods (Pollard et al. 2002; Lawrence & Barker 2009). Although the parents interviewed would have liked to choose healthier foods, financial pressures affected their choices, and caused them to make regular sacrifices of certain items in place of other unavoidable costs. Parents did not unanimously perceive fruits and vegetables to be prohibitively expensive, which would suggest that other parents from similar socio-economic backgrounds can be made aware that eating healthily, and including fruits and vegetables in the diet regularly, is feasible on a budget.
The majority of influences cited by our sample, which affected feeding pre-school children (as outlined in Table 2) related to other agents, rather than just parents themselves; their food choice decisions were situational, they occurred within an ecological context and were influenced by numerous other factors, such as the social and familial environment (Bisogni et al. 2007). Earlier sociological work shows that while it is women who tend to make the daily decisions about the foods brought into a household and eaten by the family, these decisions are situated within the wider family context, and are shaped by the preferences of their partners and children (Charles & Kerr 1988). They must act as pacifiers at mealtimes, resolving conflicts between family members and ‘ensuring that mealtimes are a happy family occasion’ (Charles & Kerr 1988). For the parents in our sample, food practices were the result of a compromise between knowing what foods were best for the families and being able to provide them based on what they perceive they could afford (both in terms of time and cost), negotiating with other family members (influencing ex-partners and grandparents’ habits) and satisfying children’s likes and dislikes.

Most parents in our sample had experienced fussy eating or neophobic tendencies to some extent by their children and believed the quality of their children’s diets suffered as a result. While parents were aware that this is a common phenomenon for children to begin to go through during their second year, it made it no less distressing and parents struggled to find effective solutions to overcome it. Parents seemed to ‘beat themselves up’ that their inability to get their children to eat well indicated a failure as parents. There is evidence to suggest that parental control is positively associated with children’s fruit and vegetable consumption (Wardle et al. 2005) therefore supporting parents to gain control, to successfully introduce new foods while developing skills for effective parenting could be extremely beneficial in this instance.

It is interesting to note that very few differences were found between the urban and rural participants in the study. One difference that was apparent was the higher levels of confidence and experience in cooking among the rural parents. These parents referred more to their upbringing and that being exposed to their parents cooking while growing up and being taught what was healthy had an impact on the way they now cooked and provided food for their families. The families interviewed in their homes in Cornwall seemed to be slightly more lacking in confidence, with smaller social support networks, and expressed stronger feelings of isolation. The relatively small differences in the results from our two study locations maybe because both are similarly low-income communities.

This study has collected interesting data from a diverse sample of parents using children’s centres in an urban and rural setting in England. The focus groups enabled parents to describe and share their personal experiences of managing and coping with feeding their young children. In addition, a small number of family interviews were also conducted in Cornwall for parents who were not children’s centre users. This provided some additional insights from more socially isolated parents. However, it is important to acknowledge the limitations of this investigation; focus groups were at times rather rushed because of the busy nature of children’s centres, which may have prevented the research team from exploring key issues in sufficient depth. In some groups, it was difficult to get all participants actively engaged in discussions due to there being some dominant parents. A member of the health visiting team was present during the family interviews, which may have affected the content of these interviews. In addition, family interviews were only conducted in Cornwall, potentially enabling the exploration of some themes more in Cornwall than in Islington.

The results of this study have provided some valuable insights into the range of factors influencing parental feeding practices. The parental accounts have highlighted some of the environmental, social, family and individual influences on feeding practices and the strategies parents use to cope with these. The data have been valuable in informing the development of an early year’s nutrition intervention. It is very apparent from this qualitative data that nutrition interventions designed to support parents of young children need to be multifaceted in nature. The provision of nutrition information alone will have minimal impact. Instead, practical and applied
support that focuses on developing parents’ skills and ability to cope on a restricted budget are needed. Practical advice on ways of dealing with fussy eating is also clearly necessary.

This study has also highlighted the need to provide nutritional support in a timely manner. While parents reported that they received support from health visitors and midwives while their children were younger (less than 12 months), as their children got older, there was a sense that parents felt they were ‘left to their own devices’ until their children attended school. Based on the results of this study, the optimal time to implement a new community-based support programme and fill an apparently much needed gap could be between 18 months and starting school.

**Conclusion**

This research suggests the poor eating habits of many pre-school children may be less a case of parental ignorance, but rather the product of a range of coping strategies developed in the context of modern life. There is a need to design tailored interventions, which provide parents with the necessary knowledge and practical skills to feed their children on a restricted budget and with little free time, while also taking their sociocultural values into consideration. Helping parents to develop effective coping strategies, which build their confidence and self-efficacy, may enable them to make positive changes to their children’s diets.

**Key points**

Parental approaches to feeding pre-school children are shaped by practical considerations, social/familial influences and fussy eating behaviours which are common at this age.

The poor eating habits of pre-school children may be less a case of parental ignorance, but rather the product of a range of coping strategies developed in the context of modern life.

There is a need to provide nutritional support for pre-school children and their families in a timely and sensitive manner, which aims to build parental confidence and self-efficacy.

**Acknowledgements**

We would like to thank all the parents who gave their time to take part in the study. We would also like to thank the project steering group and the funding body, the Food Standards Agency and the Department of Health.

**Source of funding**

This work was commissioned by the Food Standards Agency in 2009 and supported by the Department of Health (UK) from 2010.

**Conflicts of interest**

The authors have declared no conflicts of interest.

**Contributions**

AH analysed and interpreted the data and wrote the initial draft of the manuscript. AD provided guidance in data analyses. RW, AD, HO, CP, PM and GR assisted in the interpretation of results. All co-authors participated in manuscript preparation and critically reviewed all sections of the text for important intellectual content.

**References**


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Developing a nutrition intervention in children's centres: exploring views of parents in rural/urban settings in the UK

Heather R Ohly, Arabella Hayter, Clare Pettinger, Hynek Pikhart, Richard G Watt and Gail A Rees

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Short Communication

Developing a nutrition intervention in children’s centres: exploring views of parents in rural/urban settings in the UK

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Submitted 16 December 2011: Final revision received 14 June 2012: Accepted 17 July 2012

Abstract

Objective: The present study explored parents’ requirements for healthy eating support prior to the development of a tailored intervention. Design: A cross-sectional study of parents attending children’s centres. Setting: Children’s centres in Cornwall (rural south-west England) and Islington (urban London borough). Subjects: A total of 261 parents (94.2% female) of pre-school children (aged 2–5 years) completed a questionnaire on factors influencing food choice, and preferences for and views on healthy eating support. Results: Parents reported that health, taste, freshness and quality were the most important factors influencing their food choices for their pre-school children. The importance of individual factors varied according to level of educational attainment. Over a third (38%) of parents said they wanted more advice on healthy eating for children. Less educated parents showed the greatest interest in learning more about several aspects: what a ‘healthy diet’ means, how to prepare and cook healthy food, how to understand food labels, budgeting for food, examples of healthy food and snacks for children, appropriate portion sizes for children and ways to encourage children to eat well. Conclusions: There was demand for healthy eating support among parents of pre-school children, especially those who are less educated, in one rural and one urban area of England.

The most recent National Diet and Nutrition Survey in the UK showed that the diets of children aged 1–5 years contained less than the recommended amount of fruit and vegetables(1). Almost a third of toddlers’ non-milk extrinsic sugars intake was from drinks including soft drinks (12%) and fruit juice (15%), despite advice from health professionals to give under-5s water and milk between meals and diluted fruit juice at mealtimes only(2). Eating habits developed in childhood are likely to persist into adulthood, so it is important that such nutritional issues are addressed(3).

Large-scale nutrition interventions in the UK have also focused mainly on school-aged children(4–6). There is a lack of evidence from the UK to facilitate the implementation of effective healthy eating programmes targeting pre-school children(7). One major national intervention is Mini-MEND, a healthy lifestyle programme for families with overweight children aged 2–4 years(8), but early evaluations did not include dietary assessments(9). In the USA and Australia, recent pre-school nutrition interventions have been more rigorously designed and evaluated, showing significant dietary improvements(10–12). These complex interventions involved parent education programmes and community capacity building and were developed through consultation with stakeholders including parents. This kind of consultation with parents has been recommended in the UK to develop food and nutrition interventions in early years settings(13).

Parents are the primary food providers for young children, as well as being important role models(14). However, parents’ food choices on behalf of their children may be influenced by a multitude of factors. A study in Southampton found that women of low educational attainment felt a lack of control over food choices for themselves and their families because of the cost of healthy food, the need to avoid waste, the temptation to
It is important that we further investigate the factors influencing food choice, which may vary geographically, so that we can develop appropriate and effective interventions involving parents.

The current exploratory study was undertaken to inform the development of a family-centred nutrition intervention, to be delivered in children's centres in two distinct geographical locations (one urban and one rural) in the UK. Children's centres are Government-funded early years settings where children under 5 years of age and their families can receive integrated services and support, such as access to health and parenting services, advice and information on healthy lifestyles, training and return to work, and (in some areas) high-quality early years child care. It was considered essential to consult parents in this study to ensure that the resulting intervention met their needs and addressed the real-life challenges of providing a healthy diet for young children.

Therefore, the aims of the present study were: (i) to explore factors influencing parental food choices for their children and (ii) to assess parents' views and perspectives on healthy eating support.

**Methods**

A cross-sectional questionnaire study of parents attending children's centres in two contrasting rural and urban locations was undertaken. The study received ethical approval from Camden and Islington Community Research Ethics Committee (REC reference: 09/H0722/56).

**Study populations**

Cornwall (rural study location) and Islington (urban study location) were chosen to represent the diverse range of low-income communities across England. Cornwall has a history of disadvantage arising from its isolated geographical location and the decline of traditional industries. Its most deprived district, Penwith, was ranked the 21st most deprived district in England in 2007\(^{(17)}\). The Borough of Islington is located in inner London and was ranked the sixth most deprived district in England in 2007\(^{(17)}\). The two locations have very different ethnic profiles. The population of Cornwall was 97% white British in 2001, compared with 57% in Islington and 87% in the whole of England\(^{(18)}\).

**Sampling**

Children's centres in each geographical location were randomly selected to participate in the study. Based on the results from a similar study investigating barriers to healthy eating and physical activity in school-aged children in New Zealand (\(n \, 101\))\(^{(19)}\) and sample size estimation using intra-cluster correlation, a minimum sample size of 200 parents was required. Based on an estimate of approximately fifteen parents participating on average in each centre, fifteen children's centres (30% of total) were randomly selected across the two locations (10/34 in Cornwall and 5/16 in Islington). The selected centres were contacted for permission to collect data. At the individual level, parents were included if they had a child aged 2–5 years without any medical dietary requirements. Mothers and fathers were included, but only one parent per family.

**Questionnaires**

The questionnaire was developed specifically for the current project, to further explore themes that emerged from previous focus groups with different groups of parents (findings to be published separately). Some questions, for example those on food choice, were modified from other relevant validated questionnaires\(^{(10,20,21)}\).

The draft questionnaire was piloted with parents (\(n \, 14\)) to ensure that it was clear, unambiguous and could be completed within 15 min.

The final questionnaire consisted of a variety of multiple-choice and open-ended questions. First, parents were asked about basic demographic and social characteristics such as gender (parent/child), age (parent/child), marital status, ethnicity, employment status and educational attainment. Level of educational attainment was grouped into three categories: 'low' (none or GCSE), 'medium' (A Level or Diploma) or 'high' (university or professional qualification). Parents were asked about factors influencing food choice: 'It is important to me that the food I serve to my child on a typical day is ... familiar to my child; something my child likes; something the whole family likes; quick and easy to prepare; easily available in local shops or markets', etc. They were asked to indicate whether each factor was 'very important', 'moderately important' or 'not important'. Parents were then asked what sort of healthy eating support they would like: 'Which of the following would you find useful at your children's centre? Learning about what is a healthy balanced diet; preparation and cooking of foods; recipe ideas for the children; overcoming fussy eating; introducing new foods', etc. Parents were asked to indicate whether each one would be 'very useful', 'moderately useful' or 'not useful'. Space was available for parents to add their own suggestions about support they would like regarding healthy eating.

**Data collection**

The questionnaire was self-administered by parents, the majority of whom were approached face-to-face to encourage participation. It was produced in English only, so ability to comprehend English was a prerequisite for participation. Parent and child play sessions were visited by the researchers. All parents in attendance with a child aged 2–5 years were asked to complete the questionnaire at their leisure during the session. The researchers briefly explained the purpose of the questionnaire, provided further written information about the study, and then took written consent.
Parents’ views on nutrition intervention

prior to participation. In some cases, members of staff
were given additional questionnaires to distribute at other
sessions. Each parent was given the opportunity to enter
a prize draw, as an incentive to take part.

Statistical analyses

Data were analysed using the SPSS statistical software pack-
age version 17-0 and the following statistical tests: Pearson $\chi^2$
and $\chi^2$ test for trend (when appropriate for ordinal expo-
sures) for categorical outcomes; and independent-samples $t$
test for continuous outcomes. A $P$ value of less than
0-05 was regarded as statistically significant.

Parents were compared by level of educational attain-
ment to identify the type of parents in greatest need
of nutrition intervention. Results are presented for both
locations combined unless otherwise indicated. Parents
were also compared between the two locations, to
identify any geographical differences in factors influen-
cing food choice and healthy eating support required.
Only statistically significant differences between Cornwall
and Islington have been reported.

Results

Response rate

The questionnaire was completed by 261 parents, which
represents 57% of the questionnaires distributed by
researchers and children’s centre staff (160/254 in Cornwall;
101/206 in Islington; 261/460 in total). This number is likely
to be an underestimate of the real response rate as it is not
possible to estimate what proportion of questionnaires was
distributed by centre staff.

Sample characteristics

The parents in Cornwall were generally younger ($P=0-01$),
more likely to be married or cohabiting, less ethnically
diverse and less likely to be working full-time (all
$P<0-01$; Table 1). There was no significant difference in
educational attainment between the two locations. Most
of the respondents were female (94-2%). This was not
intentional but reflects the gender split of parents encoun-
tered during recruitment.

Factors influencing food choice

The most important factors influencing parents’ food
choice on behalf of their children were: how healthy the
foods were, the taste of food, the freshness and quality
of food (>80% said very important). Some factors influ-
encing food choice were considered more important
by less educated parents: the familiarity of food to the
child ($P<0-001$), food being liked by the whole family
($P=0-03$) and the affordability of food ($P<0-01$; Table 2).
In contrast, the freshness and quality of food was con-
sidered to be more important by more educated parents
($P=0-04$; Table 2). When comparing the two locations, the

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<th>Characteristic</th>
<th>Total sample (n 261)</th>
<th>Cornwall (n 160)</th>
<th>Islington (n 101)</th>
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<td>50.6</td>
<td>55.4</td>
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<td>Female</td>
<td>47.5</td>
<td>49.4</td>
<td>44.6</td>
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<td>Child age (months)</td>
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<td>31.9</td>
<td>32.9</td>
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<td>Parent gender (%)</td>
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<tr>
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<td>32.6</td>
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<td>6.0</td>
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<td>58.8</td>
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<td>93.1</td>
<td>46.5</td>
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<td>6.9</td>
<td>53.5</td>
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<td>31.2</td>
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<td>Medium</td>
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<td>High</td>
<td>31.6</td>
<td>28.7</td>
<td>36.6</td>
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*Pearson $\chi^2$ test.
†Independent-samples $t$ test.
Table 2 Percentage of parents who thought the factors influencing food choice listed were very important, according to level of educational attainment: parents of pre-school children (age 2–5 years) attending children’s centres in Cornwall (rural south-west England) and Islington (urban London Borough)

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<tr>
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<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>P*</th>
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</thead>
<tbody>
<tr>
<td>Familiar to my child</td>
<td>43.4</td>
<td>28.2</td>
<td>14.5</td>
<td>&lt;0.001</td>
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<tr>
<td>Something my child likes</td>
<td>61.8</td>
<td>50.0</td>
<td>50.6</td>
<td>0.17</td>
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<td>Something the whole family likes</td>
<td>44.6</td>
<td>31.8</td>
<td>27.3</td>
<td>0.03</td>
</tr>
<tr>
<td>Quick and easy to prepare</td>
<td>21.9</td>
<td>10.7</td>
<td>23.4</td>
<td>0.79</td>
</tr>
<tr>
<td>Easily available in local shops or markets</td>
<td>45.8</td>
<td>32.1</td>
<td>37.7</td>
<td>0.32</td>
</tr>
<tr>
<td>Fresh and good quality</td>
<td>79.7</td>
<td>75.6</td>
<td>92.4</td>
<td>0.04</td>
</tr>
<tr>
<td>Not expensive</td>
<td>38.4</td>
<td>36.1</td>
<td>18.4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Tastes good</td>
<td>84.9</td>
<td>77.6</td>
<td>87.0</td>
<td>0.72</td>
</tr>
<tr>
<td>Contains no artificial ingredients</td>
<td>59.7</td>
<td>53.0</td>
<td>65.4</td>
<td>0.46</td>
</tr>
<tr>
<td>Healthy</td>
<td>89.5</td>
<td>77.6</td>
<td>87.3</td>
<td>0.73</td>
</tr>
</tbody>
</table>

*\( \chi^2 \) test for trend (n 261).

Table 3 Percentage of parents who thought the options for support listed would be very useful, according to level of educational attainment: parents of pre-school children (age 2–5 years) attending children’s centres in Cornwall (rural south-west England) and Islington (urban London Borough)

<table>
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<th>Level of education</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning about</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is a healthy balanced diet?</td>
<td>46.7</td>
<td>37.5</td>
<td>22.4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Preparation and cooking of foods</td>
<td>41.1</td>
<td>31.3</td>
<td>24.7</td>
<td>0.03</td>
</tr>
<tr>
<td>Recipe ideas for children</td>
<td>82.9</td>
<td>72.0</td>
<td>70.5</td>
<td>0.08</td>
</tr>
<tr>
<td>Overcoming fussy eating</td>
<td>58.4</td>
<td>59.3</td>
<td>59.0</td>
<td>0.95</td>
</tr>
<tr>
<td>Introducing new foods</td>
<td>59.5</td>
<td>56.6</td>
<td>44.2</td>
<td>0.06</td>
</tr>
<tr>
<td>Food and play</td>
<td>57.5</td>
<td>48.8</td>
<td>50.0</td>
<td>0.36</td>
</tr>
<tr>
<td>Understanding food labels</td>
<td>45.1</td>
<td>34.6</td>
<td>19.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Budgeting for food</td>
<td>55.4</td>
<td>40.5</td>
<td>18.2</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Healthy foods to give your children</td>
<td>57.5</td>
<td>46.9</td>
<td>37.3</td>
<td>0.01</td>
</tr>
<tr>
<td>Healthy snacks to give your children</td>
<td>57.3</td>
<td>54.3</td>
<td>39.7</td>
<td>0.03</td>
</tr>
<tr>
<td>Appropriate portion sizes for children</td>
<td>59.2</td>
<td>55.0</td>
<td>36.4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Ways to encourage children to eat well</td>
<td>68.4</td>
<td>61.3</td>
<td>50.0</td>
<td>0.02</td>
</tr>
<tr>
<td>Talking to other parents about children’s food</td>
<td>38.9</td>
<td>34.2</td>
<td>34.2</td>
<td>0.56</td>
</tr>
<tr>
<td>Centre staff to receive more training about food and nutrition</td>
<td>33.8</td>
<td>34.6</td>
<td>15.1</td>
<td>0.01</td>
</tr>
<tr>
<td>Centre staff visiting you at home to advise you on helping your child to eat well</td>
<td>18.1</td>
<td>16.3</td>
<td>9.5</td>
<td>0.14</td>
</tr>
</tbody>
</table>

*\( \chi^2 \) test for trend (n 261).

cost of food was more important to parents in Cornwall than in Islington (\( P = 0.04 \)); this was the only significant geographical difference.

Healthy eating support required

Thirty-eight per cent of parents said they would like more advice to help their child to eat well. The response to this question (yes/no) did not differ significantly between parents with low, medium and high educational attainment. When asked what kind of healthy eating support they would like to help their child to eat well, the following options were the most popular with parents (considered ‘very useful’ by \( >50\% \)): recipe ideas for children (75%), practical ways to encourage children to eat well (60%), overcoming fussy eating (59%), introducing new foods (54%), food and play – ways to make food fun (52%), examples of healthy snacks for children (52%) and appropriate portion sizes for children (50%). The least popular option was home-based support for parents; only 16% of parents thought this would be very useful. Some parents added comments regarding other ways they would like to be supported: these included provision of healthier snacks at the children’s centre, cooking and growing activities, healthy options including cultural foods (Islington) and the benefits of healthy eating.

Parents were grouped by level of education to show which options were considered very useful in each group (Table 3). Significantly more of the less educated parents wanted to learn more about: what a ‘healthy diet’ means (\( P < 0.01 \)), how to prepare and cook healthy food (\( P = 0.03 \)), how to understand food labels, budgeting for food (both \( P < 0.001 \)), examples of healthy food and
snacks for children ($P = 0.01$ and $0.03$, respectively), appropriate portion sizes for children ($P < 0.01$) and ways to encourage children to eat well ($P = 0.02$).

**Discussion**

The results demonstrate that a wide range of factors influence the food choice of parents in the UK. The most important factors in this sample of parents were healthiness, taste, freshness and quality. Previous studies have shown that a myriad of factors affect how and what parents choose to feed their children, including the cost of food, convenience, limited food skills, social influences (e.g. family, food rules, marketing) and health concerns\(^{(15,19,22,23)}\). A study of low-income mothers of 2-year-old children in Scotland showed that, although mothers’ general knowledge about healthy eating was good, several factors were associated with poor diet among children; these included confusion about healthy eating advice, busy lifestyle, meals not eaten as a family and previously rejected foods not being offered\(^{(24)}\).

Parents’ perceptions of the importance of individual factors were associated with their level of education. This concurs with other studies investigating the links between parental education, children’s food intakes and the mediating effects of parenting practices\(^{(25)}\).

Parents were consulted directly about the type of support they would find most useful to help their child to eat well. Almost half of the ideas suggested proved popular with over 50% of parents, illustrating the demand for healthy eating interventions. Although less popular than other options, home-based support may be preferred by some families and this approach has shown some success\(^{(10)}\). Similar consultations with parents and stakeholders have been used to develop successful overseas nutrition interventions targeting children\(^{(10,19)}\).

The type of support required was compared by parents’ level of education, to facilitate the development of more tailored support. For example, less educated parents were more concerned about the affordability of healthy food and requested support with basic food acquisition skills such as budgeting for food and understanding food labels. A recent study in Germany found that low parental education and low income were associated with poor diet in children aged 2 years\(^{(26)}\). This supports our findings that less educated parents want more support from a nutrition intervention.

As with most exploratory studies, the limitations of the current study must be acknowledged. First, the scope and length of the questionnaire were limited by acceptable parental completion time. In the complex field of parental food choice, topics and questions not included could have added to the depth of information gathered in the study. Second, the sample is unlikely to be fully representative of children’s centre users. Participation was voluntary and some parents opted out of completing the questionnaires.

The results suggest some sociodemographic differences between children’s centre users in rural and urban areas of England. Children’s centres in Islington provide day care services and therefore attract more working parents than those in Cornwall. This may account for some of the differences observed, for example in marital status.

**Conclusions**

The present study demonstrates demand for further interventions supporting parents to improve the diets of young children in one rural and one urban area of England. It provides a valuable insight into the everyday food choices and concerns of parents and the specific kinds of support they feel they need. In particular, the following key points were found.

1. The three most popular ideas for the intervention were recipe ideas for children (75%), practical ways to encourage children to eat well (60%) and overcoming fussy eating (59%).
2. Factors influencing parents’ food choice and the type of support required were associated with level of education.
3. There was greater demand for healthy eating interventions from parents with lower levels of education.

Children’s centres provide an ideal setting in which to deliver healthy eating support and, although not all parents attend children’s centres, there are plenty of parents within their reach who would benefit. The current exploratory survey was part of an ongoing consultation process to develop an intervention targeting parents and pre-school children. The next stage is to pilot the intervention in children’s centres in Cornwall and Islington. That study will generate much needed evidence from the UK on nutrition intervention in early childhood.

**Acknowledgements**

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thank all of the parents who gave up their time to complete the questionnaire in Cornwall and Islington, the project steering group and the funding body.

References


FOCUS GROUPS WITH PARENTS - TOPIC GUIDE

1. Introduction and Welcome
   a. Aims of focus group and general details of study
   b. Simple introductions, including details of participant’s children
      o Establish how many children participants have and emphasise that discussion is focused on under fives

   (Objective: Get group talking to each other, feeling settled and relaxed. Gives observer a chance to know what type of families they have in the group).

2. Icebreaker

   Hand out examples of foods and generate general discussion around them. They should be a mixture of 'healthy and unhealthy' foods and foods marketed directly at young children. Discuss with participants what they think about these foods, whether their child eats them.
   o Possible prompts
      ▪ If ‘healthy’ is used, ask why.

   (Objective: To stimulate general discussion on children's foods).

3. Topics to explore
   a. We are interested in understanding more about what factors influence your child’s eating habits.
      o Possible prompts
         ▪ Consider a usual sort of day in terms of snacks and foods
         ▪ What determines choice of types of food
         ▪ Childs likes and dislikes – what determines this
         ▪ Fussy eaters – particular strong dislikes
         ▪ Other family members – siblings, partners food preferences
         ▪ Established routines or constant 'battles over food'
         ▪ Time to prepare meals
         ▪ Costs constraints
         ▪ Impact of TV advertising etc etc
         ▪ Which of these influences are greatest?

   b. Can you briefly describe your child’s diet? What kind of foods do they like? Have you had any concerns about your child’s eating habits in the past? Note: emphasise they should tell us about the under 5 children.
      o Possible prompts
         ▪ Allergies
         ▪ Concerns with sugary foods
         ▪ Food refusal
         ▪ Concerns both at home and at Children's Centre
c. Have you tried to make changes to your child’s eating habits in the past? Why? What happened? Were you successful?
   o Possible prompts
     ▪ What changes were attempted
     ▪ What actually happened
     ▪ Explore barriers to change

d. Have you received any advice/help on changing your child's eating habits in the past?
   o Possible prompts
     ▪ Who provided help
     ▪ How effective was it
     ▪ How could the help have been improved
     ▪ Who they would rely on most for advice

e. Now let’s talk about ways in which the Children's Centre could help you with your child’s eating habits. Distribute set of cards with different options for support from Children’s Centres – explore views on value of each option, why helpful or not and eventually ask group to rank ideas on level of usefulness Note: ranking as a group might be difficult so could have yes and no piles and then ask most useful of yes pile.
   o Possible prompts
     ▪ Explore views on proposed support
     ▪ What most valued and why
     ▪ What considered least valuable and why

f. Explore idea of providing home based practical advice and support from Children's Centre staff to help with children's eating habits
   o Possible prompts
     ▪ How would they feel about someone visiting their home to provide practical help on feeding their child
     ▪ What type of advice would be most helpful (budgeting, recipes, cooking tips, availability and access to foods etc)
     ▪ Their views on best practical details on times to visit etc

g. Lastly we are interested to hear your views on how best we can engage and encourage parents to become involved in the future plans for this project.
   o Possible prompts
     ▪ Are parents likely to be interested in this type of project
     ▪ How can we encourage parents to be involved especially those who need most help eg young mothers
FOCUS GROUPS WITH PARENTS

h. Anything we have missed out upon that is relevant to this topic

4. Wrap Up

a. Thank participants for taking part
b. Reassure about confidentiality
c. Summarise how information will be used
d. Opportunity to ask any further final questions
CONSENT FORM DEVELOPMENT: 18/08/2009, VERSION 2

CONSENT FORM

Study title
Development of a family centred nutrition intervention delivered in Children's Centres and the home environment

Investigator
Prof Richard Watt; Department of Epidemiology & Public Health, University College London

Please tick box

1. I confirm that I have read and understand the information sheet dated 11/05/2009 (version 1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason.

3. I agree to take part in the above study.

______________________              ______________              ______________________
Name of participant                           Date                                      Signature

______________________              ________________              ______________________
Name of researcher                     Date                                      Signature

UCL Department of Epidemiology and Public Health
University College London  1-19 Torrington Place London  WC1E 6BT
Tel: +44 (0)20 7679 1699   Fax: +44 (0)20 7813 0280
r.watt@ucl.ac.uk,  www.ucl.ac.uk/dph
1. Introduction and Welcome
   a. Aims of focus group and general details of study
   b. Simple introductions, including details of staffs’ roles

2. Topics to explore
   a. We are interested in understanding more about what factors influence children’s eating habits. Firstly, do you consider the children in your centre to have a ‘healthy’ diet?
      o Possible prompts
         ▪ Must determine what they classify as healthy

   b. What are the most common problems you encounter in your work with preschool children, with food and healthy eating?
      o Possible prompts
         ▪ Food brought into centres by parents
         ▪ Lack of parental knowledge
         ▪ Failure to engage in healthy eating activities
         ▪ Fussy eaters

   c. How much influence/control does the centre have over what the children eat?
      o Possible prompts
         ▪ How great a focus is food and nutrition
         ▪ How parents and children have responded to existing activities and policies

   d. What healthy eating activities are currently being delivered in your Children's Centres and how successful have they been?
      o Possible prompts
         ▪ Use summary list (Cornwall)
         ▪ Who provided help
         ▪ How effective was it
         ▪ How could the help have been improved

   e. What knowledge do you have of other interventions for healthy eating in young children?
      o Possible prompts
         ▪ At your centre
Children's Centres Staff Focus Groups

- In the local area
- Elsewhere
- Specific examples (e.g. Mini-MEND) Use summary list (Cornwall)
- Recruitment, uptake and adherence to programmes
- Cost-effectiveness, sustainability

f. Now let’s talk about ways in which the Children’s Centre could help parents with their children’s eating habits. Distribute set of cards with different options for support from Children’s Centres – explore views on value of each option, why helpful or not and eventually ask group to rank ideas on level of usefulness

  o Possible prompts
    - Explore views on proposed support
    - What most useful and why
    - What considered least useful and why

g. We are interested to hear your views on how best we can engage and encourage parents to become involved in future plans for this project

  o Possible prompts
    - Particularly vulnerable groups such as young parents and fathers

h. Which staff do you consider would be best placed to provide dietary support to families in the centre?

  o Possible prompts
    - Extra training needed for staff
    - Possible financial and time constraints

i. Lastly, we are interested to hear your ideas on the value and feasibility of providing home based practical advice and support from Children’s Centre staff to help with children’s eating habits

  o Possible prompts
    - Acceptability of staff going into the home
    - Which staff most suitable

3. Wrap Up
   a. Thank participants for taking part
   b. Reassure about confidentiality
   c. Summarise how information will be used
   d. Opportunity to ask any further final questions
A research team from University College London, in partnership with NHS Islington, is working with Children's Centres to develop an eating programme for young children in Islington. We have just started the programme and we would like to ask you some questions about helping your child. Your comments and ideas will help us develop a practical and useful programme.

We are hoping that you will help us by filling in this questionnaire. It should take no more than 15 minutes to complete. If you have more than one child attending a Children's Centre, please complete only one questionnaire about one of your children, who is aged 2-5 years.

There are no right or wrong answers to the questions. We are interested in what parents really do and what they would like to happen.

Your responses will be treated confidentially by the research team. You will not be contacted by any third parties and you will not be named in any reports.

Please return your completed questionnaire to the reception at your Children’s Centre as soon as possible.

Thank you for your time.

All completed questionnaires will be entered into a PRIZE DRAW to win a £40 high street voucher.

Please provide your name and contact details on Page 7 if you wish to be entered.
Name of Children’s Centre: ________________________________

### ABOUT YOUR CHILD

<table>
<thead>
<tr>
<th>What is your child’s date of birth?</th>
<th>/ /</th>
<th>Boy</th>
<th>Girl</th>
<th>(please tick one)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How many other children do you have? List their ages:

<table>
<thead>
<tr>
<th>Does your child attend the Children's Centre?</th>
<th>Full time</th>
<th>Part time</th>
<th>Drop-in only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you use any of the following services at your local Children's Centre? (Tick any that apply)

- Stay and play
- Baby massage
- Father’s group
- Young parents’ group
- Exercise class, e.g. yoga, keep fit
- Ante-natal group
- Breastfeeding support
- English language help

Please list any other services you use at the Children's Centre:

### ABOUT YOU

<table>
<thead>
<tr>
<th>What is your date of birth?</th>
<th>/ /</th>
<th>Male</th>
<th>Female</th>
<th>(please tick one)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Postcode:

<table>
<thead>
<tr>
<th>Marital status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Married / Cohabiting</td>
</tr>
<tr>
<td>Separated / Divorced</td>
</tr>
<tr>
<td>Widowed</td>
</tr>
</tbody>
</table>

What is your ethnic group? Please tick as appropriate. If you belong to more than one ethnic group, please tick the group to which you consider that you belong, or tick ‘any other ethnic group’ and then describe your background in the space provided.

- White British
- Black African
- Black Caribbean
- Indian
- Bangladeshi
- White Other
- Middle Eastern
- Black Other
- Pakistani
- Chinese
- Don’t want to answer
- Other (please specify) ________________________________

What is your employment status?

- Employed full-time
- Employed part-time
- Unemployed
- Not working (full-time home maker)
- Other

What is your highest qualification?

- None
- GCSE or equivalent
- BTEC/NVG/Diploma
- A level or equivalent
- University degree
- Other
We are interested to know what types of foods and drinks your child eats. Please include those eaten at mealtimes and as snacks.

What kinds of fruit did your child eat yesterday?

What kinds of vegetables did your child eat yesterday?

Can you tell us what kind of snacks your 2-5 year old has?

What foods, if any, do you avoid giving your child?

Can you tell us what types of drinks your 2-5 year old usually has? (Please tick all that apply) Please write down the brand names if you know them.

<table>
<thead>
<tr>
<th>Options</th>
<th>Yes</th>
<th>No</th>
<th>If yes, what brand?</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% fresh fruit juice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Another type of fruit juice, e.g. Fruit Shoot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squash with sugar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squash without sugar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fizzy drink with sugar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fizzy drink without sugar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tea or coffee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you prepare your child’s food using fresh ingredients? Always □ Most of the time □ Sometimes □ Rarely □ Never □

Do you give your child ready prepared foods to eat? Always □ Most of the time □ Sometimes □ Rarely □ Never □

Do you eat meals together as a family? Always □ Most of the time □ Sometimes □ Rarely □ Never □

Do you cook separate meals for different members of the family? Always □ Most of the time □ Sometimes □ Rarely □ Never □

Do you plan meals in advance? Always □ Most of the time □ Sometimes □ Rarely □ Never □
MOTIVATIONS FOR CHOOSING FOODS FOR YOUR CHILD

We are interested in knowing what factors influence the foods you choose for your child. Please read each item carefully and decide whether you agree or disagree with each statement. Put a tick in the box that best reflects your feelings.

<table>
<thead>
<tr>
<th>I would like my child to eat more fruit</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you disagreed, please go to the next question about vegetables. If you agreed, please tell us why your child doesn’t eat more fruit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

My child would eat more fruit but...

- they are too expensive
- my child does not like eating them
- I don’t know how to prepare them
- they are not available near to where I live
- they go off too quickly
- other reason (please specify)

<table>
<thead>
<tr>
<th>I would like my child to eat more vegetables</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you disagreed, please go to the last question on this page. If you agreed, please tell us why your child doesn’t eat more vegetables.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

My child would eat more vegetables but...

- they are too expensive
- my child does not like eating them
- I don’t know how to prepare them
- they are not available near to where I live
- they go off too quickly
- other reason (please specify)

Please read each item carefully and decide how important it is to you. Put a tick in the box that best reflects your feelings.

It is important to me that the food I serve my child on a typical day:

<table>
<thead>
<tr>
<th>Important</th>
<th>Very important</th>
<th>Moderately important</th>
<th>Not important</th>
</tr>
</thead>
<tbody>
<tr>
<td>...is familiar to my child</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is something my child likes</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is something the whole family likes</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is quick and easy to prepare</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is easily available in local shops or markets</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is fresh and good quality</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is not expensive</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...tastes good</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...contains no artificial ingredients</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>...is healthy</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>WHAT EXTRA SUPPORT WOULD YOU LIKE?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the past have you received any advice about your child’s eating from any of the following people? (Tick any that apply)

- [ ] Doctor/GP
- [ ] Nursery worker
- [ ] Health visitor
- [ ] Friend
- [ ] Childminder
- [ ] Books/leaflets/magazines/internet
- [ ] Relative *(Please state who)*
- [ ] Other (please specify)

Would you like more advice to help your child eat well?  
[ ] Yes  [ ] No

Have you ever attended any form of food-related activity at your Children’s Centre?  
[ ] Yes  [ ] No

If so, please give a brief description of the activity and what you thought of it?

Does your Children’s Centre have a food policy (e.g. Do’s and Don’ts around food for children, or written guidelines on foods/drinks which can be served at the Centre etc)?  
[ ] Yes  [ ] No  [ ] Don’t know

If you answered no, would you like your Children's Centre to have a food policy?  
[ ] Yes  [ ] No  [ ] Don’t know

Please continue on the following page.
The following questions will help us get a better idea of what services and support you would find useful. Please put a tick in the box that best reflects your feelings. Remember there are no right or wrong answers – we are interested in what you would find most useful.

Which of the following would you find useful at your Children’s Centre?

<table>
<thead>
<tr>
<th>Service</th>
<th>Very useful</th>
<th>Moderately useful</th>
<th>Not useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning about…...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>…what is a healthy balanced diet</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…preparation and cooking of foods</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…recipe ideas for the children</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…overcoming fussy eating</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…introducing new foods</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…food and play</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…understanding food labels</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…budgeting for food</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…healthy foods to give your children</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…healthy snacks to give your children</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…appropriate portion sizes for children</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>…ways to encourage your children to eat well</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Talking to other parents about children’s food</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Centre staff to receive more training about food and nutrition</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Centre staff visiting you at home to advise you on helping your child to eat well</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Other (please specify)

If you were offered home-based support from your Children’s Centre about food, which type of person would you prefer to be visited by?

- Health professional, e.g. Health visitor ☐
- Another parent or volunteer ☐
- Family Support Worker ☐
- I do not want to be visited at home ☐

OTHER SUGGESTIONS

Finally, do you have any other comments or suggestions on how Children’s Centres can help you with healthy eating for your child??
PRIZE DRAW

To be entered into the £40 prize draw, please provide the following information:

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Numbers</td>
</tr>
<tr>
<td>Home:</td>
</tr>
<tr>
<td>Mobile:</td>
</tr>
<tr>
<td>Email Address</td>
</tr>
</tbody>
</table>

FUTURE RESEARCH

If you would be interested in taking part in future research studies into children’s eating habits, and agree to being contacted again, please tick this box.

All information provided is strictly confidential and will not be passed outside the research team.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE

If you have any questions, please contact:

**Arabella Hayter**

Telephone: 0207 679 1703

Email: a.hayter@ucl.ac.uk

Please return your completed questionnaire to the reception at your Children’s Centre.
CONSENT FORM

Study title
Development of a family centred nutrition intervention delivered in Children's Centres and the home environment

Investigator
Prof Richard Watt; Department of Epidemiology & Public Health, University College London

Please tick box

1. I confirm that I have had the opportunity to read the information sheet, dated 18/8/2009 (version 2), to ask questions and have had these answered satisfactorily. [ ]

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason. [ ]

3. I confirm that my child is not aged under 1 year, not on a special diet due to medical problems and is not diagnosed with a serious medical condition. [ ]

4. I agree to take part in the above study. [ ]

Name of participant ___________________________ Date ________________ Signature ____________________________

Name of researcher ___________________________ Date ________________ Signature ____________________________
## SECTION A: ABOUT YOU

1. Name:  

2. Job title:  

3. How long have you worked at the centre?  

   ____________ Years ____________ Months  

## SECTION B: ABOUT THE CENTRE

4. Name of Centre:  

5. What type of Children's Centre is it?  

   - Council funded  
   - Voluntary sector  
   - Other (*please specify*)  

   ________________________________  

6a. How many full time places does the centre have in total?  

6b. Please provide a breakdown by age if known.  

   Under 2s ________________________  
   2-3s ____________________________  
   3-5s ____________________________  

7. How many of the following staff work at the centre?  

   Please include staff employed by the centre & staff employed by other agencies who work at the centre.  

<table>
<thead>
<tr>
<th>Staff Position</th>
<th>Full-time</th>
<th>Part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of Centre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assistant/deputy Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centre administrator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health visitor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family support worker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community worker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social worker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catering staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursery assistant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please list any other staff)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION C: FACILITIES AT THE CENTRE

8a. Which of the following facilities are there at your centre?
- ☐ Community kitchen (suitable for cooking demonstrations)
- ☐ Kitchen (to provide children’s meals)
- ☐ Meeting space for parents groups etc.
- ☐ Other training rooms
- ☐ Outdoor space for children’s play
- ☐ Outdoor space for growing vegetables
- ☐ Access to allotment off site

8b. Please list any other facilities at the Centre which you feel are relevant.

SECTION D: OVERVIEW OF FOOD PROVISION

9. Does your Centre actively promote the following types of food and drink?

<table>
<thead>
<tr>
<th>Type</th>
<th>Every day</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Vegetables</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Fruit juice</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Water</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Milk</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

10. Is there a formal policy to restrict any of the following at the Centre?

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisps</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Chocolate</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Sweets</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Cakes</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Biscuits</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Fizzy drinks</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other (please state)</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

SECTION E: HEALTHY FOOD POLICY

14a. Does the centre have a written healthy food policy? ☐ Yes ☐ No

14b. If yes, please attach a copy of the policy if possible.

15. If you do have a healthy food policy, is a copy of the policy provided and explained to parents? ☐ Yes ☐ No ☐ N.A
| 16a. Does the centre provide staff training on food and nutrition? | Yes ☐ | No ☐ |
| 16b. If so, please provide details of who is trained and a brief description of the objectives. | |

**SECTION G: FOOD-RELATED SERVICES AND ACTIVITIES AT THE CENTRE**

| 17. What food services are provided at the centre? | |
| Breakfast club | Yes ☐ | No but would like to ☐ | No ☐ |
| Cooked or packed lunch | Yes ☐ | No but would like to ☐ | No ☐ |
| Snacks | Yes ☐ | No but would like to ☐ | No ☐ |
| Community café | Yes ☐ | No but would like to ☐ | No ☐ |
| Cooking sessions | Yes ☐ | No but would like to ☐ | No ☐ |
| Taster sessions for parents | Yes ☐ | No but would like to ☐ | No ☐ |
| Taster sessions for children | Yes ☐ | No but would like to ☐ | No ☐ |
| Other (please specify) | |

| 18a. Does anyone provide healthy eating advice to parents at the centre? | Yes ☐ | No ☐ |

If you answered no, please continue to Q 20a.

| 18b. If you answered yes, who delivers the healthy eating advice to parents at the centre? | |
| Please indicate whether this is a dedicated session or part of their every day job. | |
| Centre manager | Dedicated session ☐ | Every day job ☐ |
| Health visitor | Dedicated session ☐ | Every day job ☐ |
| Midwife | Dedicated session ☐ | Every day job ☐ |
| Family support worker | Dedicated session ☐ | Every day job ☐ |
| Community worker | Dedicated session ☐ | Every day job ☐ |
| Volunteers | Dedicated session ☐ | Every day job ☐ |
| Other (please specify) | Dedicated session ☐ | Every day job ☐ |

Please continue to Q19a on the following page.
19a. Which of these healthy eating programmes has the centre delivered in the last 12 months or planned for the next 3 months?

<table>
<thead>
<tr>
<th>Programme</th>
<th>Yes ☐</th>
<th>No but would like to ☐</th>
<th>No ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini-MEND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy Start Scheme</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Kitchens</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cook and Eat sessions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding peer support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weaning support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19b. If you answered yes to any of the above, please comment on the impact and/or popularity of these programmes, including:
- numbers who attended;
- what could have been done better;
- would you run the programmes again in the future?

Please continue on page 6 if you would like more space. If you only answered no, please go to section H.

SECTION H: FAMILY OUTREACH SERVICES

20a. Does anyone provide healthy eating advice to parents in the home?

Yes ☐
No ☐

If not, please continue to Q 21.

20b. If you answered yes, who delivers healthy eating advice to parents at home? Please indicate how often this occurs.

<table>
<thead>
<tr>
<th>Role</th>
<th>Regularly ☐</th>
<th>Sometimes ☐</th>
<th>Never ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health visitor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family support worker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community worker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteers (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>Regularly ☐</td>
<td>Sometimes ☐</td>
<td>Never ☐</td>
</tr>
</tbody>
</table>
21. Do you think parents need more support with any of the following aspects of healthy eating? Please indicate whether this would be best done at the centre, in the home or both. Please circle the three that you think are particularly important.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Centre</th>
<th>Home</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic cooking and food preparation skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recipe ideas for children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overcoming fussy eating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introducing new foods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taster sessions (for parents and children)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food and play activities (making food fun)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding food labels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeting for food shopping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information on healthy foods and snacks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goal setting and motivation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate portion sizes for children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing different food needs within the family (e.g. food for teenagers and young children)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

22. Which members of staff, in your opinion, would be best placed currently to deliver this kind of healthy eating advice… (Please consider capacity as well as competency.)

a) …at the centre?

b) …in the home?

23a. Do you think parent would like to be visited in their homes? Yes □ No □

23b. If you answered no, please tell us why:
<table>
<thead>
<tr>
<th>Section I: Links with Local Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>24a.</strong> Do you regularly join up with other Children's Centres for delivering activities?</td>
</tr>
<tr>
<td><strong>24b.</strong> If so, please name the centres and list the activities:</td>
</tr>
<tr>
<td><strong>25.</strong> Do you feel you have adequate support for tackling healthy eating from the local PCT?</td>
</tr>
<tr>
<td><strong>26.</strong> Do you feel you have adequate support for tackling healthy eating from the local council?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section J: Other Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you would like to comment on anything else, please do so here. Please attach extra pages if necessary.</td>
</tr>
</tbody>
</table>

---

Thank you very much for completing this questionnaire.

Please return to:

**Arabella Hayter**

Department of Epidemiology & Public Health,

University College London,

1-19 Torrington Place,

London, WC1E 7HB
24 hour recall protocol

In our evaluation of Cherry, we are using the 24 hour recall method to assess children’s dietary intake. The parent will be the respondent; the child will be the subject. This documentation has been modified from the Low Income Diet and Nutrition Survey (LIDNS) and must be used by everyone involved in data collection.

Contents

Summary of team responsibilities Page 1
Instructions for conducting 24 hour recall Page 2
Detailed information about food and drink Page 4
Script for use during 24 hour recall Page 8

Summary of team responsibilities

• Everyone involved must allocate time in their calendars and be ready to make phone calls on the dates provided

• HC/AH will conduct the first recall face to face when they meet the parent at home (same time as doing the questionnaire)

• HC/AH will ask the parent if any days/times are not convenient for subsequent telephone recalls

• HC/AH will make an appointment for the second recall and explain to the parent that it may be someone else who telephones them (will confirm by text)

• HC/AH will send out parents’ details and appointment times to their team (HC send to GR, CP, PM, KR; AH send to Erica, Ashley, Hannah) who will reply stating which parents they wish to take on for recalls 2-4

• Before the second recall, HC/AH will send the parent a text message to confirm who will be calling them and when

• After recalls 2 and 3, the appointment for the next recall will be made (note: if we do not make appointments it will be very difficult to manage four recalls per family within ten day period)

• Four recalls must be completed on non-consecutive days within a 10 day period

• One recall must be conducted on a Sunday or Monday (to collect weekend data)

• At the end of each fortnight, data will be sent to HC/AH by recorded delivery

• Any problems will be reported to HC/AH immediately
Instructions for conducting 24 hour recall

Obtaining a 24 hour recall

The 24 hour recall aims to provide a complete record of all food and drink eaten on the previous day between midnight and midnight. The time element is important, as there may be respondents who have unusual time schedules meaning that their dietary patterns are not typical.

The 24 hour recall is collected in three steps (Triple Pass):

1. A quick list of foods eaten or drunk
   Respondents (parents) are asked to report everything that their child had to eat or drink on the previous day between midnight and midnight. This recall session is not interrupted. At the end of the recall, respondents are invited to add any additional items not initially recalled. If at this stage subjects give you more detail than expected, this should be recorded in brackets.

2. Collection of detailed information concerning the items in the quick list
   For each item of food or drink, respondents are asked to provide additional detail (use the links to find further information):
   - The time at which the food or drink was consumed
   - A full description of the food or drink (e.g. ensure you collect information on the peels on fruit and vegetables)
   - Brand name where available/applicable
   - The amount of food eaten, based on household measures or photographs of different portion sizes of foods
   - Any leftovers or second helpings
   - Any foods likely to be eaten in combination e.g. milk in coffee
   - Recipes and other combinations of foods e.g. sandwiches
   - Alternative foods offered after refusals
   - The place where the food was eaten

   It is important to work through activities of the previous day to prompt the parent to recall any foods or drinks that were given (e.g. being out of the house, visiting friends or relatives, parent and toddler groups, shopping, in-between meal snacking, any drinks offered during the day/night because the child was unsettled etc). Any food/drinks consumed while with childminder must also be recorded.

3. A recall review in which respondents are given an opportunity to provide additional information and for the interviewer to prompt for information about foods or drink not mentioned
   The interviewer reviews all the food eaten and drunk in chronological order, prompts for any additional eating or drinking occasions or foods/drink possibly consumed and clarifies any ambiguities regarding type of food eaten or portion size. All of the information gathered is recorded by the interviewer in the 24 hour recall template document.
Additional questions
When the respondents have finished recalling the food and drink that their child consumed, they are asked questions regarding drinking water and dietary supplements (including vitamin and mineral supplements). Respondents are also asked whether or not the day recalled was typical of their child’s usual food consumption, or if it was unusual or restricted in any way and if so for what reason.

Interviewer feedback questionnaire
Finally, there is an interviewer evaluation to be filled in by you as soon as possible after each 24 hour recall interview. It is very important, as it gives an indication of how complete or accurate you feel the information given by the respondent is.

Other carers (IMPORTANT)
There will be occasions when the parent is unable to provide sufficient information because the child has been in the care of someone else e.g. friend, relative, childminder, school or nursery. Therefore, when making appointments, check if anyone else will be caring for the child the day before. If they will be or might be, try to rearrange the appointment for another day (when the parent will be caring for the child the day before).

Otherwise, ask the parent to ask the other carer to write down all food and drink given to the child with as much detail as possible. The parent can then pass the information onto you during the recall. If you feel there are gaps in the recall, please make a note of this in your feedback. We may be able to contact the other carer directly. Please report back to HC/AH if this system is not working very well.

For school or nursery meals – ask the parent to ask the child what they had when they arrive home from school or nursery (more likely to remember) or find out from the school before the telephone recall appointment. Please report back to HC/AH if this system is not working very well.

Telephone interviews
After the first recall, the portion size handout will be given to the parent to keep for reference during the telephone recalls. If HC/AH does not feel that a telephone recall is appropriate (e.g. because the respondent had difficulty using the portion size handout at the first recall or would prefer to be visited at home), she will arrange a time to do the second recall in person.

Child sickness
If the parent says the child is unwell when you call, it may be better to rearrange the appointment if the child’s appetite was affected the day before. Otherwise, make a note of this on the question sheet.

Queries
If you have questions regarding any aspect of the 24 hour recall, please contact Heather Clark on 07791 899927 or email heather.clark@plymouth.ac.uk
If Heather can’t answer your question, she will contact the LIDNS team for advice.
Detailed information about food and drink

Description of food and drink
During the recall, you will need to enter a description of each food and drink item the child consumed. In general the following information is required:

BOX 1
- What type of food or drink was it?
- How was it bought e.g. fresh, canned, frozen, dehydrated etc?
- Were the fruits and vegetables peeled or not?
- Was it homemade? If so, what were the ingredients?
- How was it cooked – boiled, poached, fried etc?
- If it was cooked in fat/oil, or fat/oil was used or added (e.g. to a sandwich or baked potato), what sort of fat/oil was used?
- If it was a dried or dehydrated product (e.g. hot chocolate) was it reconstituted using water, milk (e.g. skimmed, semi-skimmed, whole) or both etc?
- Was the item coated before cooking e.g. flour, batter, egg, breadcrumbs?
- Was it unsweetened, or sweetened with sugar or artificial sweeteners (specify name)?
- Was it low/reduced fat, or low/reduced calorie?

This is not a comprehensive list, but offers a guide as to the type of information required.

Prompts and probing
The information is collected with a series of neutral prompts to encourage recall. You should ask neutral questions which do not encourage a specific response. For example, ask “how was that cooked?” rather than “was that boiled or fried?”. For additional foods, you should not presuppose consumption of foods in specific combinations. For example, ask “what else did you have with that?” rather than “did you have butter on your potatoes?”. However, where initial neutral prompts do not lead to further information it may be necessary to list a series of specific options e.g. “was that boiled, fried, roasted, grilled etc?” Always list the options.

Where foods come in different varieties e.g. low fat, low calorie, caffeine free etc, always refer to the “normal” or “standard” variety before the low fat/low calorie variety e.g. “so was that standard or diet coke?”
Food Description Prompt Sheet
For many foods, there is a certain amount of detail that should be collected in addition to that specified in Box 1. These foods can be found on the separate Food Description Prompt Sheet. The foods are arranged in alphabetical order along with the information that is required.

Commonly Consumed Additional Food Prompts
Included in the Food Description Prompt Sheet is a table called Commonly Consumed Additional Food Prompts. This lists foods frequently eaten in combination with other foods e.g. sugar on cereal, butter on potatoes, jam on toast. Use this list to probe for foods that a respondent may forget.

Evidence of probing
Recording on the record sheet where you have probed helps clear up ambiguities that may arise when it comes to coding a particular food or drink.

- If a respondent does NOT eat something typically eaten in combination with another food or they break their usual eating habit e.g. they have toast, but no spread, record “no spread” on the recall to indicate that you have probed for that food.
- For foods where low fat or low calorie varieties are available as well as “standard” versions e.g. yoghurts, soft drinks etc, if the respondent has the “standard” version, record “standard” on the recall to show that you have probed for the different types.
- If you have probed and the respondent does not know or cannot remember exactly what they had to eat or drink, indicate this by recording P – on the recall (this stands for a negative response when probed).

Place eaten
The respondent should be asked where the child was when he/she had each food and drink item. Jot down what they say in the ‘meal place’ column and after the interview use card 1 to allocate a code to each place. In some cases, it is important to ascertain the source of food, as well as the place.

Brand name
Where possible, you need to ask the respondent for the brand name of foods they have consumed e.g. Heinz baked beans, Kellogg’s Cornflakes etc. During the first home interview, respondents may offer to show you items from their food store. This is very useful in identifying exactly what has been consumed. Make a note during the recall so that you can collect all the information at the end rather than disrupting the interview by the respondent repeatedly going into the kitchen. You should copy down full details of the product, in terms of name, brand name and specific type (where appropriate) e.g. Tesco’s High Juice, no added sugar, blackcurrant and apple.

Amount of food: estimation of portion size
At the beginning of the interview the respondent is introduced to the process involved in the 24-hour recall and told that they will be asked to provide details of what their child has eaten, and to give an estimate of the amount that their child ate (portion size).
A portion size can be described in terms of:

- Packages (e.g. 1 Kit Kat (2 sticks), ½ a tin baked beans)
- Weights (e.g. 420g tin of baked beans, 125 g pot of yoghurt)
- Household measures (e.g. one level teaspoon of sugar)
- Photographs of portion sizes from CWT resource

The respondent can use whichever method is easiest for him/her. If the food comes in a package of a certain size this is probably the most accurate way of estimating portion size. If the packaging has a weight on, ask to see the package as this will help with identification of the precise type of food and the size. Do NOT let respondents guess weights. For some respondents, photographs provide the most accurate estimate of portion size.

A selection of photographs will be available but they will not cover every type of food. Equivalent foods can be compared to the photographs i.e. foods of sufficiently similar shape and/or consistency. For example, a photograph of chicken curry with sauce could be used to establish the portion size of any meat, chicken or fish curry with sauce.

**Spoon size**

If a respondent describes the amount their child had to eat in spoonfuls, it is important to determine the size of the spoon. Often respondents will say they used a tablespoon when what they actually used was a dessertspoon. To clarify the size of the spoon you should show the respondent the picture of a life size tablespoon, dessertspoon and teaspoon.

**Leftovers**

After the respondent has given an amount, it is important to remember to ask them whether their child ate the whole portion. If not, it is necessary to find out what proportion of the amount was left and enter that in the ‘leftovers’ column e.g. ½ left. Try to be consistent in how you do this. Remember to ask about any other food not consumed (e.g. spilled or refused). Did the mother offer any alternative foods because of this?

**Second helpings**

Second servings should be recorded on a separate line of the record sheet, in order to be able to see that it was a second helping. Record the portion size of the second helping in the ‘amount’ column.

**Recipes**

For homemade dishes, like beef stew, you should write ‘recipe’ with a number next to this entry on the record sheet. Then on the recipe sheet you need to record the following information:

- List of ingredients – Record details about the ingredients in the same way you would if the food was eaten on its own. For example, if tomatoes were used, were they fresh or tinned. If oil was used, what type? If meat, what animal and what cut? Probe for ingredients they might have forgotten e.g. water, oil, herbs, spices.
- Amounts of ingredients – This can be in household measures, weights or using photographs in the portion size handout (see estimation of portion size)
• Cooking method – Record some brief information on how the dish was prepared and cooked. This can sometimes elicit extra or forgotten detail. So if the respondent says they fried something, remember to ask if it was in oil and the type used. If they stewed or boiled a dish, remember to ask about how much water they used. If they mashed a potato, did they use any milk or spread?
• Find out whether anything was added to the child’s portion, or was it taken out before certain ingredients (e.g. spices or flavourings) were added?
• If another member of the household prepared the dish, you should try and get the relevant information about the recipe from them.

Ethnic foods
When collecting information about ethnic foods it is important to obtain as much information about a food/dish that is ‘unusual’. Ask the respondent for full recipe details, e.g. the ingredients used including the amounts; how these were prepared before they were cooked and finally how the food/dish itself was cooked. It is important to check the spelling of the names of ethnic foods as many have unusual spellings and/or alternative names. For example, okra (a vegetable grown in South America, West Indies and India; used in soups and stews) is also called lady’s finger; ‘moong’ beans are also spelt ‘mung’ beans. Therefore, you should ask for packets or containers (if available) to check the spelling if you or the respondent are not sure.

Composite dishes
When a food contains several different components, the individual components and the amount of each component should be recorded on a separate line on the record sheet. For example, a sandwich would be split into bread, spread and filling. Children might have more than one filling so important to capture both. Also, they often eat the filling and leave the bread, so this should be entered as leftovers.

Takeaway foods and fast foods
If the child has consumed any takeaway or fast foods, wherever possible, record the name and address of the food outlet and the price of the item.

Food and drink consumed over a long period of time
The child may eat or drink something over an extended period of time such as sipping a litre of water throughout the day. If it is too difficult to separate specific amounts consumed at specific times, you can record the time period and the amount consumed over that period e.g. 13:00 – 16:00, ½ litre of bottled water.
Script for use during 24 hour recall

The following script provides detailed prompts for obtaining information in the individual 24 hour recall of food and drink consumption. Please follow the sequence carefully. **It is very important that the protocol is followed at every interview, even when you feel confident with the method.** You can use additional prompts and clarify details, but do not miss out any of the script.

Where words appear in upper case inside brackets, supply the appropriate word (e.g. if (DAY) appears, say the name of the appropriate day of the week). Words that appear inside square brackets are instructions to you.

**[COMPLETE COVER SHEET]**

**Introduction at beginning of 24 hour recall (recalls 1-4)**

**[INTERVIEWER SAYS]**

My name is (YOUR NAME). I am going to ask you about everything that (NAME OF CHILD) had to eat and drink yesterday. By this I mean, 24 hours from midnight to midnight. I would like to know exactly what was eaten and drunk and how much (NAME OF CHILD) had. Before we start, can I check that (NAME OF CHILD) is your youngest child aged between 18 months and 5 years?

**[IF THE ANSWER IN YES, PLEASE CONTINUE. IF THE ANSWER IS NO, ESTABLISH WHO THE YOUNGEST CHILD IN THIS AGE RANGE IS AND PROCEED IN RELATION TO THAT CHILD.]**

**Introducing portion size estimation (first recall only)**

**[INTERVIEWER SAYS]**

When I ask you how much food and drink (NAME OF CHILD) had, I would like you to tell me in as much detail as possible in terms of the size of the package for example half a tin of baked beans. In this case also tell me the size of the tin, for example a small or large tin.

Or you can tell me in terms of household utensils, for example a cup of milk. In this case I would like you to tell me how big the cup was – small, medium or large. Another example would be two spoonfuls of yoghurt. In this case I would ask you for the size of spoon – teaspoon, tablespoon or dessertspoon.

To help you to tell me how much of a food (NAME OF CHILD) ate, I have some photographs of food portions. You can tell me how much your child ate in relation to these photographs, if that is easier than describing the amount of food. [SHOW PHOTOGRAPHS]

We also have life size photographs of plates, bowls, cups and spoons so that you can show me which one is most like the one your child used. [SHOW PHOTOGRAPHS]
Have a look at a few more photographs and then we can start. [ALLOW THEM TO Flick THROUGH HANDOUT IF THEY WANT TO AND START WHEN THEY ARE ready].

If (NAME OF CHILD) ate any homemade dishes, for example a stew, I would like you to tell me the ingredients and how much was used. If you do not know the ingredients I may need to ask whoever prepared and cooked the dish.

OR

Introducing portion size estimation (recalls 2-4)

When I ask you how much of each food and drink (NAME OF CHILD) had, I would like you to tell me in as much detail as possible. You can describe the amount in terms of the size of the package, household utensils or using the photographs you were given at the first interview.

Do you have the photograph in front of you? [IF NOT ASK THEM TO GO AND GET IT IF POSSIBLE]
24 hour recall itself

**Step 1 – Quick List**

[INTERVIEWER SAYS]

I would like you to tell me everything that (NAME OF CHILD) had to eat and drink yesterday. By yesterday I mean, from midnight to midnight. Please include everything that (NAME OF CHILD) had to eat and drink at home and away from home, including snacks, sweets and any drinks.

- First we’ll make a list of the foods (NAME OF CHILD) ate and drank all day yesterday (DAY).
- Next I’ll ask you about the foods including amounts and then I’ll ask you a few questions.
- It may help you to remember what (NAME OF CHILD) ate by thinking about where you and (NAME OF CHILD) were, who you and (NAME OF CHILD) were with, or what you and (NAME OF CHILD) were doing yesterday; like playing with friends or watching television. Feel free to keep these activities in mind and say them aloud if it helps you.
- So… if you would like to start at midnight at the beginning of (DAY).

[COMPLETE QUICK LIST WITHOUT INTERRUPTION]

[WHEN SUBJECT STOPS ASK]

What else? Can you think of anything else that (NAME OF CHILD) had to eat or drink yesterday?

[ADD ITEMS INTO QUICK LIST AT APPROPRIATE POINTS]

[THEN ASK]

What else?

[CONTINUE UNTIL NO FURTHER ADDITIONS]

There are some foods that people often forget. In addition to what you have already told me about, did (NAME OF CHILD) have any:

- Biscuits, cakes, sweets, chocolate bars or other confectionery
- Crisps, peanuts or other snacks
- Fruit juice, squash or fizzy drinks
- Water
- Milk
- Dried fruit
- Bread sticks
- Anything you have not already told me about?
Step 2 – Detailed information

[INTERVIEWER SAYS]

Now I would like to go through the list you have just given me and ask you some details about each item of food and drink. If while we are talking you remember anything else that (NAME OF CHILD) had to eat or drink, please tell me.

Was (FIRST FOOD FROM QUICK LIST) the first thing that (NAME OF CHILD) had to eat/drink yesterday?

IF YES: [GO TO BOX 2]

IF NO: What was the first thing (NAME OF CHILD) had to eat or drink yesterday? [RECORD ITEM NAMED ON MAIN LIST....GO TO BOX 2]

Was (NEXT ITEM FROM QUICK LIST) the next thing (NAME OF CHILD) had to eat/drink?

[CONFIRM IF FOOD IS OBVIOUSLY PART OF SAME MEAL (e.g. milk on cereal) AND GO TO BOX 2]

[CONTINUE UNTIL ALL FOODS ON QUICK LIST HAVE BEEN TICKED]

BOX 2

FOR EACH ITEM ASK FOR THE FOLLOWING DETAILS:

<table>
<thead>
<tr>
<th><strong>Time eaten</strong></th>
<th>Record time in 24 hour clock format e.g. 18.00 for 6pm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meal place</strong></td>
<td>Code using card 1 after interview</td>
</tr>
<tr>
<td><strong>Detailed description of food</strong></td>
<td>Use food description prompt sheet</td>
</tr>
<tr>
<td><strong>Brand name (if applicable)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Amount of food</strong></td>
<td>Use photos and/or household measures</td>
</tr>
<tr>
<td><strong>Leftovers</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Second helpings</strong></td>
<td>Record on separate line</td>
</tr>
<tr>
<td><strong>Prompt for foods eaten in combination (if necessary)</strong></td>
<td>Record on separate line</td>
</tr>
<tr>
<td><strong>Prompt for recipes (if necessary)</strong></td>
<td>Record on recipe pages including amounts of ingredients</td>
</tr>
<tr>
<td><strong>Prompt for additions (if necessary)</strong></td>
<td>Use commonly consumed additional food prompts</td>
</tr>
<tr>
<td><strong>Place eaten</strong></td>
<td>Use show card 1 and enter letter</td>
</tr>
</tbody>
</table>

THEN TICK ITEM OFF QUICK LIST AND MOVE ONTO NEXT ITEM
Step 3 – Review

[Interviewer Says]

Let’s see if I have everything. I would like you to try and remember anything else that (NAME OF CHILD) had to eat or drink yesterday that you have not already told me about, including anything that (NAME OF CHILD) had to eat or drink while you were preparing a meal or waiting to eat.

[Use the following time prompts to elicit additional foods]

- Did (NAME OF CHILD) have anything to eat or drink between midnight yesterday and (FIRST TIME/OCCASION)?

- At (FIRST TIME/OCCASION) (NAME OF CHILD) had (FOODS/DRINKS). Do you recall (NAME OF CHILD) having anything else to eat or drink?

- Did (NAME OF CHILD) have anything to eat or drink between (FIRST TIME/OCCASION) and (NEXT TIME/OCCASION)?

[Repeat until last time/occasion]

- At (LAST TIME/OCCASION) (NAME OF CHILD) had (FOODS/DRINKS). Do you recall (NAME OF CHILD) having anything else to eat or drink?

- Did (NAME OF CHILD) have anything else to eat or drink between (LAST TIME/OCCASION) and midnight last night?

[Where brand has not been recalled at first request but respondent has product in cupboard, fridge etc, ask if you can check product and enter brand name on recall – for telephone recalls ask them to go and check or refer to previous recall and ask was it the same?]

[NOW go through additional questions]
Part A: General questions about you and your family
We'll start with some general questions about you and your family. Please choose your answers from the options on the answer sheet in front of you.

1. **What is your date of birth?**
   Day  
   Month  
   Year  

2. **What is your sex?**
   Male  
   Female  

3. **What is your marital status?**
   Single (never married)  
   Separated (but still legally married)  
   Married  
   Divorced  
   Co-habiting or civil partnership  
   Widowed  

4. **What is your ethnic group?**
   For 'any other' please ask the parent to specify and write on the line
   **White:**
   British  
   Irish  
   Any other White background  

   **Black or Black British:**
   Caribbean  
   African  
   Any other Black background  

   **Mixed:**
   White and Black Caribbean  
   White and Black African  
   White and Asian  
   Any other Mixed background  

   **Chinese or other ethnic group:**
   Chinese  
   Any other  

   **Asian or Asian British:**
   Indian  
   Pakistani  
   Bangladeshi  
   Any other Asian background  
5. Which of these best describes your employment situation?
For ‘other’ please ask the parent to specify and write on the line
Employed full-time ☐ Full-time parent/homemaker ☐
Employed part-time ☐ Long-term sick or disabled ☐
Self-employed or freelance ☐ Carer ☐
Unemployed – looking for work ☐ Other ☐
Full-time student ☐

6. Do you receive any of these benefits?
For ‘other’ please ask the parent to specify and write on the line
No benefits ☐ Child Tax Credits ☐
Job Seeker’s Allowance ☐ Child Benefit ☐
Income Support ☐ Healthy Start ☐
Housing Benefit ☐ Other ☐

7. What is your highest qualification?
For ‘other’ please ask the parent to specify and write on the line
No qualifications ☐ BTEC/NVQ Level 4, 5 or 6 ☐
BTEC/NVQ Level 1 or 2 ☐ Higher National Diploma (HND) ☐
GCSE or O Level ☐ University Degree ☐
BTEC/NVQ Level 3 ☐ Postgraduate ☐
A Level or AS Level ☐ Other qualification ☐

8. How many children do you have (who live in the same house as you)?
Insert number

9. What are their ages?
List ages (specify months or years)

Circle the age of the child who will be the subject of 24 hour recalls (must be between 18 months and 5 years)
10. Do you use one or more children’s centres?
   Yes ☐  No ☐
   If yes please name centre/s used

11. How often do you use it/them?
   Every day ☐  Occasionally ☐
   3 or 4 days a week ☐  Never ☐
   1 or 2 days a week ☐

12. What do you use it/them for?
   For ‘other’ please ask the parent to specify and write on the line
   Child care ☐  Courses or classes ☐
   Stay and play sessions ☐  Support and advice ☐
   Groups e.g. dads, young people ☐  Other ☐

Part B: Questions about your food intake
These questions are about what you had to eat and drink yesterday. Please try to answer as honestly as possible. Start from question 13.

13. Did you eat any of the following foods yesterday?
   If yes, please ask what sort and how much and write details on line
   a. Fruit (includes fresh, frozen, canned, dried)

b. Vegetables or salad (includes fresh, frozen, canned)
c. Puddings, desserts or ice cream

________________________________________________________________________
________________________________________________________________________


d. Chocolate or confectionery (sweets)

________________________________________________________________________
________________________________________________________________________


e. Cakes or biscuits (any kind)

________________________________________________________________________
________________________________________________________________________

14. **Did you drink any of the following drinks yesterday?**
   *If yes, please ask what sort and how much and write details on line*

a. Fruit Juice (100%, freshly squeezed or from concentrate)

________________________________________________________________________
________________________________________________________________________

b. Squash or ‘fruit drinks’ (e.g. Ribena, High Juice, Fruit Shoots)
   *Prompt for standard or low sugar varieties*

________________________________________________________________________
________________________________________________________________________


c. Fizzy drinks (e.g. Coke, Fanta, lemonade)
   *Prompt for standard or diet varieties*

________________________________________________________________________
________________________________________________________________________


d. Plain water (from a tap or bottled)

________________________________________________________________________
________________________________________________________________________


e. Milk or flavoured milk (e.g. milkshakes)

f. Hot drinks (e.g. tea, coffee, hot chocolate)

g. Alcoholic drinks (e.g. beer, wine, spirits)

*If the parent mentions anything unusual about ‘yesterday’ please enter here:*


---

**Part C: Questions about your knowledge and attitudes towards food**

Now I have some more questions about food. Please choose your answers from the options on the answer sheet in front of you. Start from question 15.

**15. How many portions of fruit and vegetables a day are health professionals advising children to eat?**

---

Please tell me if you think the following statements are true or false.

**16. Tinned fruit is a good source of vitamin C.**

True □  False □  Don’t know □

**17. Frozen vegetables do not contain as many nutrients as fresh vegetables.**

True □  False □  Don’t know □
18. The first ingredient listed on a food label is the one present in the largest quantity.
   True □     False □     Don’t know □

19. Children may need to try a new food up to 10 times before they like it.
   True □     False □     Don’t know □

20. The best drinks for children under 5 years are milk and water.
   True □     False □     Don’t know □

For the next questions (21-24), please look at the scale and tell me which number between 1 and 5 reflects how confident you feel about each of the following statements.

*Insert number 1-5 next to each statement*

1 = Not at all confident
5 = Extremely confident

21. How confident do you feel about being able to cook from basic ingredients?

22. How confident do you feel about following a simple recipe?

23. How confident do you feel about introducing new foods to your child under 5?

24. How confident are you that you know what foods are good for your child?
The next questions (25-29) are about potential barriers to healthy eating for you – not your child. How certain are you that you could overcome the following barriers?

Please look at the scale and tell me which number between 1 and 4 reflects how certain you feel about each of the following statements.

*Insert number 1-4 next to each statement*

1 = Very uncertain  
2 = Rather uncertain  
3 = Rather certain  
4 = Very certain

25. I can manage to stick to healthy foods even if I need a long time to develop the necessary routines.  

26. I can manage to stick to healthy foods even if I have to try several times until it works.  

27. I can manage to stick to healthy foods even if I have to rethink my entire way of eating.  

28. I can manage to stick to healthy foods even if I do not receive a great deal of support from others when making my first attempts.  

29. I can manage to stick to healthy foods even if I have to make a detailed plan.  

For the next questions (30-41), please look at the scale and tell me which number between 1 and 5 reflects your level of agreement or disagreement with each of the following statements.

*Insert number 1-5 next to each statement*

1 = Disagree strongly  
2 = Disagree  
3 = Neither agree or disagree  
4 = Agree  
5 = Agree strongly

30. I don’t think much about food each day.
31. Cooking or barbequing is not very fun.

32. Talking about what I have eaten or am going to eat is something I like to do.

33. Compared with other daily decisions, my food choices are not very important.

34. When I travel, one of the things I anticipate most is eating the food there.

35. I do most or all of the cleaning up after eating.

36. I enjoy cooking for others and myself.

37. When I eat out, I don't think or talk much about how the food tastes.

38. I do not like to mix or chop food.

39. I do most or all of my own food shopping.

40. I do not wash dishes or clean the table.

41. I care whether or not a table is nicely set.

---

**Part D: Questions about your child’s eating behaviours**

Questions 42-50 are about your child who is attending Cherry (must be aged 18 months to 5 years) so please think about him/her when you answer. Please choose your answers from the options on the answer sheet in front of you. Start from question 42.

42. **My child refuses new foods at first.**
   - Never □
   - Rarely □
   - Sometimes □
   - Often □
   - Always □

43. **My child enjoys tasting new foods.**
   - Never □
   - Rarely □
   - Sometimes □
   - Often □
   - Always □
44. My child enjoys a wide variety of foods.
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

45. My child is difficult to please with meals.
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

46. My child is interested in tasting food s/he hasn’t tasted before.
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

47. My child decides that s/he doesn’t like a food, even without tasting it.
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

48. Does your child eat the same food as the family?
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

49. What does your child usually drink from?
   A feeder or beaker with spout ☐  Go to Q50
   A plastic cup or beaker without spout (with or without straw) ☐  Go to Q50
   A ‘no spill’ beaker ☐  Go to Q50
   An ordinary cup (with or without straw) ☐  Go to Q50
   A bottle with a screw-on top or sports top ☐  Go to Q50
   A baby’s bottle ☐  Go to Q51
   Something else ☐  Go to Q50 or 51

For ‘something else’ ask for details and enter below

50. Does he/she have a baby’s bottle at all these days, even just to go to bed with?
   Include all drinks given from a bottle
   Yes ☐
   No, never has a bottle ☐
Part E: Questions about how you feel about parenting
The last questions (51-58) are about how you feel about parenting. Please choose your answers from the options on the answer sheet in front of you. Start from question 51.

51. I feel that I have too little time by myself.
   Never □  Rarely □  Sometimes □  Often □  Always □

52. I wish I did not have so many responsibilities.
   Never □  Rarely □  Sometimes □  Often □  Always □

53. My child gets on my nerves.
   Never □  Rarely □  Sometimes □  Often □  Always □

54. My child makes too many demands.
   Never □  Rarely □  Sometimes □  Often □  Always □

55. I feel that I am not as good a parent as I could be.
   Never □  Rarely □  Sometimes □  Often □  Always □

56. I feel that being a parent is much more work than pleasure.
   Never □  Rarely □  Sometimes □  Often □  Always □

57. I am doing everything I can to give my child a good life.
   Never □  Rarely □  Sometimes □  Often □  Always □

58. I feel tired from raising a family.
   Never □  Rarely □  Sometimes □  Often □  Always □

The end – remember to thank the parent

Parent's name
CONSENT FORM DEVELOPMENT: 13/10/10, VERSION 3

CONSENT FORM

Study title
Evaluation of a family centred nutrition intervention delivered in Children's Centres and the home environment

Investigator
Prof Richard Watt; Department of Epidemiology & Public Health, University College London

Please tick box

1. I confirm that I have read and understand the information sheet dated 13/10/2010 (version 3) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason.

3. I confirm that my child is not aged under 18 months, not on a special diet due to medical problems and is not diagnosed with a serious medical condition.

4. I agree to take part in the above study.

______________________              ________________              ______________________
Name of participant                           Date                                      Signature

______________________              ________________              ______________________
Name of researcher                          Date                                      Signature
Follow up questionnaire – Intervention parents ONLY

PARTICIPANT NUMBER: _________________

Part A: General questions about you and your family

Check that it is the same person that answered the original questionnaire.

The questionnaire will ask most of the same questions as we asked you 6 months ago. We’ll start with some general questions about you and your family. Please choose your answers from the options on the answer sheet in front of you.

1. Has your marital status changed in the last 6 months?  Yes ☐  No ☐
   - Single (never married) ☐
   - Separated (but still legally married) ☐
   - Married ☐
   - Divorced ☐
   - Co-habiting or civil partnership ☐
   - Widowed ☐

2. Has your employment situation changed in the last 6 months?  Yes ☐  No ☐
   For ‘other’ please ask the parent to specify and write on the line
   - Employed full-time ☐
   - Full-time parent/homemaker ☐
   - Employed part-time ☐
   - Long-term sick or disabled ☐
   - Self-employed or freelance ☐
   - Carer ☐
   - Unemployed – looking for work ☐
   - Other ☐
   - Full/part-time student ☐

3. Do you currently receive any of these benefits?  
   For ‘other’ please ask the parent to specify and write on the line
   - No benefits ☐
   - Child Tax Credits ☐
   - Job Seeker’s Allowance ☐
   - Child Benefit ☐
   - Income Support ☐
   - Healthy Start ☐
   - Housing Benefit ☐
   - Other ☐

4. Have you received any other qualifications since our last visit?  
   For ‘other’ please ask the parent to specify and write on the line
   - No ☐
   - Yes ☐
   If yes, please record:

5. How many children do you have (who live in the same house as you)?
   Insert number
6. Which children’s centres, if any, are you currently using?

Please name centre/s used

__________________________________________________________

7. How often do you use it/them?

Every day ☐ Occasionally ☐
3 or 4 days a week ☐ Never ☐
1 or 2 days a week ☐

8. What do you use it/Them for?

For ‘other’ please ask the parent to specify and write on the line

Child care ☐ Courses or classes ☐
Stay and play sessions ☐ Support and advice ☐
Groups e.g. dads, young people ☐ Other ☐

__________________________________________________________

Part B: Questions about your food intake

These questions are about what you had to eat and drink yesterday. Please try to answer as honestly as possible. Start from question 13.

13. Did you eat any of the following foods yesterday?

If yes, please ask what sort and how much and write details on line

a. Fruit (includes fresh, frozen, canned, dried)

__________________________________________________________

__________________________________________________________

b. Vegetables or salad (includes fresh, frozen, canned)

__________________________________________________________

__________________________________________________________

c. Puddings, desserts or ice cream

__________________________________________________________

__________________________________________________________
d. Chocolate or confectionery (sweets)


e. Cakes or biscuits (any kind)


14. Did you drink any of the following drinks yesterday?
   If yes, please ask what sort and how much and write details on line

a. Fruit Juice (100%, freshly squeezed or from concentrate)


b. Squash or ‘fruit drinks’ (e.g. Ribena, High Juice, Fruit Shoots)
   Prompt for standard or low sugar varieties


c. Fizzy drinks (e.g. Coke, Fanta, lemonade)
   Prompt for standard or diet varieties


d. Plain water (from a tap or bottled)


e. Milk or flavoured milk (e.g. milkshakes)
f. Hot drinks (e.g. tea, coffee, hot chocolate)

---

g. Alcoholic drinks (e.g. beer, wine, spirits)

---

If the parent mentions anything unusual about ‘yesterday’ please enter here:

---

Part C: Questions about your knowledge and attitudes towards food

Now I have some more questions about food. Please choose your answers from the options on the answer sheet in front of you. Start from question 15.

15. How many portions of fruit and vegetables a day are health professionals advising children to eat?

---

Please tell me if you think the following statements are true or false.

16. Tinned fruit is a good source of vitamin C.
   True □   False □   Don’t know □

17. Frozen vegetables do not contain as many nutrients as fresh vegetables.
   True □   False □   Don’t know □

18. The first ingredient listed on a food label is the one present in the largest quantity.
   True □   False □   Don’t know □

19. Children may need to try a new food up to 10 times before they like it.
   True □   False □   Don’t know □

20. The best drinks for children under 5 years are milk and water.
   True □   False □   Don’t know □
For the next questions (21-24), please look at the scale and tell me which number between 1 and 5 reflects how confident you feel about each of the following statements.

*Insert number 1-5 next to each statement*

\[
\begin{align*}
1 &= \text{Not at all confident} \\
5 &= \text{Extremely confident}
\end{align*}
\]

21. How confident do you feel about being able to cook from basic ingredients? 

22. How confident do you feel about following a simple recipe? 

23. How confident do you feel about introducing new foods to your child under 5? 

24. How confident are you that you know what foods are good for your child? 

The next questions (25-29) are about potential barriers to healthy eating for you – not your child. How certain are you that you could overcome the following barriers?

Please look at the scale and tell me which number between 1 and 4 reflects how certain you feel about each of the following statements.

*Insert number 1-4 next to each statement*

\[
\begin{align*}
1 &= \text{Very uncertain} \\
2 &= \text{Rather uncertain} \\
3 &= \text{Rather certain} \\
4 &= \text{Very certain}
\end{align*}
\]

25. I can manage to stick to healthy foods even if I need a long time to develop the necessary routines. 

26. I can manage to stick to healthy foods even if I have to try several times until it works. 

27. I can manage to stick to healthy foods even if I have to rethink my entire way of eating. 

28. I can manage to stick to healthy foods even if I do not receive a great deal of support from others when making my first attempts. 

29. I can manage to stick to healthy foods even if I have to make a detailed plan. 

For the next questions (30-41), please look at the scale and tell me which number between 1 and 5 reflects your level of agreement or disagreement with each of the following statements.

Insert number 1-5 next to each statement

1 = Disagree strongly
2 = Disagree
3 = Neither agree or disagree
4 = Agree
5 = Agree strongly

30. I don’t think much about food each day.

31. Cooking or barbequing is not very fun.

32. Talking about what I have eaten or am going to eat is something I like to do.

33. Compared with other daily decisions, my food choices are not very important.

34. When I travel, one of the things I anticipate most is eating the food there.

35. I do most or all of the cleaning up after eating.

36. I enjoy cooking for others and myself.

37. When I eat out, I don’t think or talk much about how the food tastes.

38. I do not like to mix or chop food.

39. I do most or all of my own food shopping.

40. I do not wash dishes or clean the table.

41. I care whether or not a table is nicely set.
Part D: Questions about your child’s eating behaviours
Questions 42-50 are about your child who is attending Cherry (must be aged 18 months to 5 years) so please think about him/her when you answer. Please choose your answers from the options on the answer sheet in front of you. Start from question 42.

42. My child refuses new foods at first.
   Never □ Rarely □ Sometimes □ Often □ Always □

43. My child enjoys tasting new foods.
   Never □ Rarely □ Sometimes □ Often □ Always □

44. My child enjoys a wide variety of foods.
   Never □ Rarely □ Sometimes □ Often □ Always □

45. My child is difficult to please with meals.
   Never □ Rarely □ Sometimes □ Often □ Always □

46. My child is interested in tasting food s/he hasn’t tasted before.
   Never □ Rarely □ Sometimes □ Often □ Always □

47. My child decides that s/he doesn’t like a food, even without tasting it.
   Never □ Rarely □ Sometimes □ Often □ Always □

48. Does your child eat the same food as the family?
   Never □ Rarely □ Sometimes □ Often □ Always □

49. What does your child usually drink from?
   A feeder or beaker with spout □ Go to Q50
   A plastic cup or beaker without spout (with or without straw) □ Go to Q50
   A ‘no spill’ beaker □ Go to Q50
   An ordinary cup (with or without straw) □ Go to Q50
   A bottle with a screw-on top or sports top □ Go to Q50
   A baby’s bottle □ Go to Q51
   Something else □ Go to Q50 or 51
   For ‘something else’ ask for details and enter below
50. **Does he/she have a baby's bottle at all these days, even just to go to bed with?**  
*Include all drinks given from a bottle*

Yes ☐

No, never has a bottle ☐

---

**Part E: Questions about how you feel about parenting**

The next questions (51-58) are about how you feel about parenting. Please choose your answers from the options on the answer sheet in front of you. Start from question 51.

51. **I feel that I have too little time by myself.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

52. **I wish I did not have so many responsibilities.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

53. **My child gets on my nerves.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

54. **My child makes too many demands.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

55. **I feel that I am not as good a parent as I could be.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

56. **I feel that being a parent is much more work than pleasure.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

57. **I am doing everything I can to give my child a good life.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

58. **I feel tired from raising a family.**
   Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐
Part F: INTERVENTION PARENTS ONLY
Questions about your views on Cherry
These last questions are about the Cherry programme and how useful you found it.

59. How many Cherry sessions did you attend?

0 □ 1 □ 2 □ 3 □ 4 □

60. Why did you miss some/all of the sessions?

- Time constraints/too busy □
- Unhappy with course format □
- Content not relevant □
- Child did not enjoy it □
- Course did not meet expectations □
- Illness □
- Childcare problems □
- Other:

If parent did not attend any sessions, thank parent and end interview.

61. Overall, how beneficial did you find the Cherry programme?

- Very beneficial □
- Quite beneficial □
- Not very beneficial □
- Not at all beneficial □

62. Which CHERRY session did you find was the most useful?

- Session 1 – Top tips for healthy eating for you and your children □
- Session 2 – Top tips for introducing new foods □
- Session 3 – Top tips for healthy snacks and drinks □
- Session 4 – Top tips for food shopping and healthy eating on a budget □

63. What changes, if any, have you made to your child’s diet as a consequence of CHERRY?
64. What changes, if any, have you made to your own diet as a consequence of CHERRY?

65. What sorts of food activities are you doing now that you were not doing before you attended Cherry? (tick all that apply)

- Eating together as a family
  - Yes ☐
  - No ☐
  - DBC* ☐

- Involving my child in cooking food
  - Yes ☐
  - No ☐
  - DBC ☐

- Using herbs and spices instead of salt
  - Yes ☐
  - No ☐
  - DBC ☐

- Using portion size information on recipe cards
  - Yes ☐
  - No ☐
  - DBC ☐

- Stopped using bottle
  - Yes ☐
  - No ☐
  - DBC ☐

- Changed the snacks that I give my child between mealtimes
  - Yes ☐
  - No ☐
  - DBC ☐

- Using cow’s milk instead of follow on milk
  - Yes ☐
  - No ☐
  - DBC ☐

- Buying frozen veg/fruit
  - Yes ☐
  - No ☐
  - DBC ☐

- Comparing prices between shops
  - Yes ☐
  - No ☐
  - DBC ☐

- Cut down eating ready meals
  - Yes ☐
  - No ☐
  - DBC ☐

- Buying in bulk to save money
  - Yes ☐
  - No ☐
  - DBC ☐

- Internet shopping
  - Yes ☐
  - No ☐
  - DBC ☐

*DBC = Doing Before Cherry - Tick here if they were already doing the activity before Cherry
66. Did you use the Tiny Tastes chart at all?  YES □    NO □  
If the answer was yes, please go to 67. 
If the answer was no, please go to 69.

67. How strongly do you agree with the following statements?
I learned something new from the Tiny Tastes chart
Disagree strongly □  Disagree □  Neither agree nor disagree □  Agree □  Agree Strongly □

68. I think Tiny Tastes worked to make my child more willing to try vegetables.
Disagree strongly □  Disagree □  Neither agree nor disagree □  Agree □  Agree Strongly □

69. If No, why didn’t you try Tiny Tastes?
(Tick all that apply):

a) I was too busy to play Tiny Tastes □
b) 10-14 tastes seemed like too many □
c) I found the Tiny Taste instructions too complicated □
d) I did not think Tiny Tastes would work for my family □
e) My child already likes vegetables so I did not see any point □
Other (please give details below) □

70. Do you have any other comments on any aspect of Cherry?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

11
Follow up questionnaire – CONTROL PARENTS ONLY

PARTICIPANT NUMBER: _________________

Part A: General questions about you and your family

Check that it is the same person that answered the original questionnaire.

The questionnaire will ask most of the same questions as we asked you 6 months ago. We’ll start with some general questions about you and your family. Please choose your answers from the options on the answer sheet in front of you.

1. Has your marital status changed in the last 6 months? Yes ☐ No ☐
   - Single (never married) ☐
   - Separated (but still legally married) ☐
   - Married ☐
   - Divorced ☐
   - Co-habiting or civil partnership ☐
   - Widowed ☐

2. Has your employment situation changed in the last 6 months? Yes ☐ No ☐
   For ‘other’ please ask the parent to specify and write on the line
   - Employed full-time ☐
   - Full-time parent/homemaker ☐
   - Employed part-time ☐
   - Long-term sick or disabled ☐
   - Self-employed or freelance ☐
   - Carer ☐
   - Unemployed – looking for work ☐
   - Other ☐
   - Full/part-time student ☐

3. Do you currently receive any of these benefits? No benefits ☐
   For ‘other’ please ask the parent to specify and write on the line
   - Child Tax Credits ☐
   - Job Seeker’s Allowance ☐
   - Child Benefit ☐
   - Income Support ☐
   - Healthy Start ☐
   - Housing Benefit ☐
   - Other ☐

4. Have you received any other qualifications since our last visit? No ☐
   For ‘other’ please ask the parent to specify and write on the line
   - Yes ☐
   If yes, please record:

5. How many children do you have (who live in the same house as you)?
   Insert number

______________________________

1
6. **Which children’s centres, if any, are you currently using?**

   Please name centre/s used

   ____________________________________________________________

7. **How often do you use it/them?**

   Every day  □   Occasionally  □
   3 or 4 days a week  □   Never  □
   1 or 2 days a week  □

8. **What do you use it/them for?**

   For ‘other’ please ask the parent to specify and write on the line

   Child care  □   Courses or classes  □
   Stay and play sessions  □   Support and advice  □
   Groups e.g. dads, young people  □   Other  □

   ____________________________________________________________

**Part B: Questions about your food intake**

These questions are about what you had to eat and drink yesterday. Please try to answer as honestly as possible. Start from question 13.

13. **Did you eat any of the following foods yesterday?**

   If yes, please ask what sort and how much and write details on line

   a. Fruit (includes fresh, frozen, canned, dried)

   ____________________________________________________________

   ____________________________________________________________

   b. Vegetables or salad (includes fresh, frozen, canned)

   ____________________________________________________________

   ____________________________________________________________

   c. Puddings, desserts or ice cream

   ____________________________________________________________

   ____________________________________________________________
d. Chocolate or confectionery (sweets)

e. Cakes or biscuits (any kind)

14. Did you drink any of the following drinks yesterday?
   *If yes, please ask what sort and how much and write details on line*

a. Fruit Juice (100%, freshly squeezed or from concentrate)

b. Squash or ‘fruit drinks’ (e.g. Ribena, High Juice, Fruit Shoots)
   *Prompt for standard or low sugar varieties*

c. Fizzy drinks (e.g. Coke, Fanta, lemonade)
   *Prompt for standard or diet varieties*

d. Plain water (from a tap or bottled)

e. Milk or flavoured milk (e.g. milkshakes)

f. Hot drinks (e.g. tea, coffee, hot chocolate)
g. Alcoholic drinks (e.g. beer, wine, spirits)

If the parent mentions anything unusual about ‘yesterday’ please enter here:

Part C: Questions about your knowledge and attitudes towards food
Now I have some more questions about food. Please choose your answers from the options on the answer sheet in front of you. Start from question 15.

15. How many portions of fruit and vegetables a day are health professionals advising children to eat?

Please tell me if you think the following statements are true or false.

16. Tinned fruit is a good source of vitamin C.
   True □  False □  Don’t know □

17. Frozen vegetables do not contain as many nutrients as fresh vegetables.
   True □  False □  Don’t know □

18. The first ingredient listed on a food label is the one present in the largest quantity.
   True □  False □  Don’t know □

19. Children may need to try a new food up to 10 times before they like it.
   True □  False □  Don’t know □

20. The best drinks for children under 5 years are milk and water.
   True □  False □  Don’t know □
For the next questions (21-24), please look at the scale and tell me which number between 1 and 5 reflects how confident you feel about each of the following statements. 

Insert number 1-5 next to each statement

1 = Not at all confident
5 = Extremely confident

21. How confident do you feel about being able to cook from basic ingredients?

22. How confident do you feel about following a simple recipe?

23. How confident do you feel about introducing new foods to your child under 5?

24. How confident are you that you know what foods are good for your child?

The next questions (25-29) are about potential barriers to healthy eating for you – not your child. How certain are you that you could overcome the following barriers? Please look at the scale and tell me which number between 1 and 4 reflects how certain you feel about each of the following statements. 

Insert number 1-4 next to each statement

1 = Very uncertain
2 = Rather uncertain
3 = Rather certain
4 = Very certain

25. I can manage to stick to healthy foods even if I need a long time to develop the necessary routines.

26. I can manage to stick to healthy foods even if I have to try several times until it works.

27. I can manage to stick to healthy foods even if I have to rethink my entire way of eating.

28. I can manage to stick to healthy foods even if I do not receive a great deal of support from others when making my first attempts.

29. I can manage to stick to healthy foods even if I have to make a detailed plan.
For the next questions (30-41), please look at the scale and tell me which number between 1 and 5 reflects your level of agreement or disagreement with each of the following statements.

*Insert number 1-5 next to each statement*

1 = Disagree strongly
2 = Disagree
3 = Neither agree or disagree
4 = Agree
5 = Agree strongly

30. I don't think much about food each day.

31. Cooking or barbequing is not very fun.

32. Talking about what I have eaten or am going to eat is something I like to do.

33. Compared with other daily decisions, my food choices are not very important.

34. When I travel, one of the things I anticipate most is eating the food there.

35. I do most or all of the cleaning up after eating.

36. I enjoy cooking for others and myself.

37. When I eat out, I don't think or talk much about how the food tastes.

38. I do not like to mix or chop food.

39. I do most or all of my own food shopping.

40. I do not wash dishes or clean the table.

41. I care whether or not a table is nicely set.
Part D: Questions about your child’s eating behaviours

Questions 42-50 are about your child who is attending Cherry (must be aged 18 months to 5 years) so please think about him/her when you answer. Please choose your answers from the options on the answer sheet in front of you. Start from question 42.

42. My child refuses new foods at first.
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

43. My child enjoys tasting new foods.
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

44. My child enjoys a wide variety of foods.
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

45. My child is difficult to please with meals.
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

46. My child is interested in tasting s/he hasn’t tasted before.
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

47. My child decides that s/he doesn’t like a food, even without tasting it.
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

48. Does your child eat the same food as the family?
   Never ○ Rarely ○ Sometimes ○ Often ○ Always ○

49. What does your child usually drink from?
   A feeder or beaker with spout ○ Go to Q50
   A plastic cup or beaker without spout (with or without straw) ○ Go to Q50
   A ‘no spill’ beaker ○ Go to Q50
   An ordinary cup (with or without straw) ○ Go to Q50
   A bottle with a screw-on top or sports top ○ Go to Q50
   A baby’s bottle ○ Go to Q51
   Something else ○ Go to Q50 or 51
   For ‘something else’ ask for details and enter below
50. Does he/she have a baby's bottle at all these days, even just to go to bed with?
Include all drinks given from a bottle
Yes ☐
No, never has a bottle ☐

Part E: Questions about how you feel about parenting
The next questions (51-58) are about how you feel about parenting. Please choose your answers from the options on the answer sheet in front of you. Start from question 51.

51. I feel that I have too little time by myself.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

52. I wish I did not have so many responsibilities.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

53. My child gets on my nerves.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

54. My child makes too many demands.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

55. I feel that I am not as good a parent as I could be.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

56. I feel that being a parent is much more work than pleasure.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

57. I am doing everything I can to give my child a good life.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

58. I feel tired from raising a family.
Never ☐  Rarely ☐  Sometimes ☐  Often ☐  Always ☐

End of interview
A Guide for Trainers

cherry
Choosing Healthy Eating when Really Young
Introduction and General Principles

Cherry (Choosing Healthy Eating when Really Young) is a nutrition programme for children under five and their parents (or carers) to encourage them to eat well. The following guide is designed to be a stand-alone resource to enable you to deliver the programme in your local children’s centre or community organisation. It is based on the original Cherry programme run in children’s centres in Islington (London) and Cornwall (SW England) and informed by additional feedback from parents, course leaders and children’s centre staff who took part.

Who developed the programme?

Cherry was developed by a multidisciplinary research team from University College London (UCL) and Plymouth University in 2009-2010. The project was funded by the Department of Health, and this practical workbook was developed as part of a randomised controlled trial which aimed to improve the evidence base about how nutrition in early years can be improved. Cherry was successfully delivered in children’s centres in Islington and Cornwall between October 2010 and September 2011.

What are the main principles of Cherry?

The main principle of Cherry is to increase fruit and vegetable consumption and to reduce the amount of sugary drinks and snacks that young children consume. Cherry also supports parents and carers to gain confidence around food and improve their own diets. Cherry is not a weight-management programme. The focus is on healthy eating and using simple changes to improve the sort of food young children and their families eat. Undoubtedly some parents will want to talk about their own or their child’s weight, but this is not the main focus of this programme and if they have concerns, they should talk to their health visitor or GP.
Cherry sessions should not feel like classroom teaching but should be interactive, relaxed and welcoming. Some parents may have problems with literacy and language, so it is important to be sensitive to this and ensure that full participation is possible using visual and verbal tasks.

**Is Cherry based on evidence?**

In order to come up with a programme that would benefit parents, the research team undertook some initial exploratory work with a selection of staff, parents and carers attending children’s centres in Islington and Cornwall. Parents and staff were asked questions about the support they would like and how a programme could be structured for them. The project team reviewed the latest national and international evidence, looking at other examples of nutrition interventions and considered which ones were the most successful. Local stakeholders and the Department of Health were also consulted throughout the development of Cherry. The aim was to create something practical and useful.

**Does Cherry work and do parents enjoy it?**

There has been a lot of very positive feedback from parents and carers who have attended the sessions as well as from children’s centre staff. Parents and carers have said they have gained an understanding of what makes a healthy balanced diet for under-fives and have developed their confidence in the kitchen, learning simple and practical ideas for preparing tasty, nutritious food at home. Parents and carers reported that their children have been willing to try new foods (particularly a range of fruits and vegetables), become more interested in food, as well as (and perhaps most importantly!) having had fun while attending the sessions. Further analysis, as part of the randomised controlled trial, showed that children who attended Cherry increased their fruit and vegetable consumption and decreased their sugary snacks and drinks consumption more than children who had not.

**Who can deliver Cherry?**
The course leader should have a qualification in nutrition and experience delivering nutrition training as well as being confident answering parents’ nutritional questions. It is also helpful to have previous experience working with families.

**How do the sessions work?**

The programme is designed to run in children’s centres when parents or carers and their children are both present. There are four weekly sessions for Cherry, each one lasting two hours. During the first hour of each session, parents and carers discuss healthy eating and nutrition with the course leader, while children attend the crèche (ideally this should be free of charge for the parent). For the second hour, parents and children come together for a ‘hands on’ cook and eat session.

Each week there is also a ‘Cherry at Home’ task. We want parents to continue to put into practice at home what they learn at Cherry. The tasks and games for ‘Cherry at Home’ are just as important as the sessions. Try to encourage parents to do them, to keep interested and most importantly, encourage them to come back the following week!

**Are there any practical issues to consider when running Cherry?**

While this manual sets out how Cherry should be delivered, much of the delivery will depend on practicalities; for example, the size of the room available may prevent you from having more than 5 parents or carers at once, or staff may not be available to assist in the running of the programme so numbers will be limited.

Cherry works best in groups of 7-8 parents and carers and their children with two course leaders. Although a group with 10 parents or carers is possible, it becomes harder to manage, particularly during the cooking sessions. If the group is bigger than 8, it would be advisable to have an extra member of staff to assist.
Be aware of parents or carers who try to dominate a group. Some people will naturally have more to say than others; try to include quieter members of the group in discussions.

Where possible, it works well if the crèche is in the adjacent room to parents. For some of the children who attend Cherry, it might be first time in a crèche and they may find it hard to settle. This can be disruptive for parents who have to leave the room repeatedly. Children can be less distressed if they know their parents or carers are not far away. If the centre is able to accommodate it, a taster crèche session before the programme starts can be an effective way to get children used to being left. This will help minimise the amount of disruption at the first session.

**What other support might parents need during the course?**

Try and make all the advice as practical as possible as one of the key aims of the course is to promote confidence around food for parents and carers. Many children’s centres also run parenting skills courses which can be usefully signposted to parents.

**Sources of additional local support**

Parents and carers may have more questions about food and health than the course leader can answer and it is useful to offer contact details for a local health visitor or other health professional who can offer on-going advice on any of the topics or issues discussed during Cherry. For further information on extra resources to support parents, please see the Resources section on page 47.

**Session guides**

Read through the session outlines and learning objectives before each session. Think about the sorts of questions that parents might ask you. If you are asked something you do not know, do not be embarrassed. Tell parents that you will find out the answer and let them know at the following session.
Consult the resource list at the beginning of each session for things you will need each week, e.g. ingredients for the cooking session, resources for games, paperwork etc. Many of the resources are available in this manual and can be photocopied for each session. Other resources, such as ingredients for cooking sessions, should be bought as near to the time of the session as possible.

Even if you are running the first session on your own, it is helpful to have someone to assist you during the cooking session as these sessions are often busy. Make sure all of the equipment you will need is laid out before the session, with the ingredients washed and any necessary food preparation done in advance. Ensure that you follow all the appropriate health and safety procedures where you are running the course and are up to date on practical food hygiene.

Remember that the timings given are only a guideline. Although you need to keep within the two hour sessions, some discussions or practical tasks may take much longer and others may take less time. The most important thing to remember is to try to achieve the learning outcomes as outlined at the top of each session; if parents are having an important conversation, let people have their say but try to steer people back towards the session plan. If there is a particular issue which parents want to talk about, invite parents to come and talk to you at the end of the session. Allow 30 minutes before the session to set up and 30 minutes to clear away at the end of each session.

**Housekeeping – starting the sessions**

At the beginning of each session it is important to run through ‘basic rules’ so that everyone in the group knows what to expect from the session and are reminded to respect other peoples’ opinions. It is also important that parents know how the session will run as well as the locations of fire exits and toilets.
Session One: Family Friendly Food

Aims and Objectives

- To introduce the aims of the Cherry programme and to get parents and carers engaged so that they come back to all sessions
- To identify what parents and carers would like to get out of the programme
- To get parents and carers comfortable talking in the group
- To engage families with handling and tasting food
- To get all parents and carers and their children involved in activities
- Explain the ‘Cherry at Home’ task (Goal Setting)

Learning Outcomes

- To understand why eating well matters, particularly the importance of healthy eating for under fives
- To be given support to read and understand front of package labelling on foods
- To become familiar with appropriate portion sizes for under fives
- To be introduced to the Eatwell plate and how to use it

Resources

- Cherry folders and pens
- Name labels for parents and carers
- Flipchart paper and pens
- Eatwell plate leaflets
- Game: Fat, Salt & Sugar Content of Popular Foods (Appendix 1)
- CWT Recipe cards
- Top Tips No.1 (page 19)
- Cherry at Home: Goal setting sheets
- Laminated pictures of foods
- Cooking equipment
- Fresh fruit and vegetables (as wide a range as possible, with a variety of colours, shapes, textures)
- Other foods to accompany, e.g. pitta breads, hummus (may be home made from CWT recipe), full-fat natural yoghurt, breadsticks, rice cakes
- Containers to take spare food home in
- Tools for data collection: paper/post-it notes/plastic balls/boxes
Session One

The first session is a general introduction to food and healthy eating. It is an opportunity for parents and carers to get to know each other and to feel comfortable working and talking in a group. Some parents and carers may be anxious about leaving their children in the crèche for the first time and may want to keep their children with them; try and help these individuals to be firm with their children and encourage them to stay in the crèche to minimise disruption to the group.

The first week’s cook and eat session is an opportunity for children to start handling, touching, smelling, chopping and tasting food.

10.00-10.15: Welcome and get to know each other

Introductions and Housekeeping

Introduce yourself and what the Cherry programme is (see main points below). Give out Cherry folders and pens, one to each parent or carer. The folders should be brought to each session and hand-outs added to it each week.

- Give an outline of the session
  - What is Cherry about?
  - What can you get out of it?
  - How each session works (theory and cooking)
  - What will children be cooking and tasting today?

What is Cherry about?

- Cherry is designed to be: fun, non-judgemental, relaxed, an opportunity to share experiences with others
- Parents and carers will learn tips for healthy eating, ways to tackle fussy eating and introduce new foods, how to shop on a budget
- Invite parents and carers to ask questions at any point. If you can’t provide an answer, you will find out before the next week’s session
- Ask parents and carers to bring folders each week, and use to keep any handouts together
**Icebreaker exercise**

- Ask each person in turn to introduce themselves, give their children’s names and ages and some of their family’s favourite foods
- Get parents and carers to write their names on name labels for the first session or ask for names and write them yourself so you can read them easily *(be aware of anyone with literacy problems)*.
- Check if anyone (parents, carers, staff or children) has any food allergies (diagnosed by a doctor) and, if so, make a note of these. It is prudent that no nuts are served at any Cherry session as a number of people have an allergy to these.

**Group promises exercise – agreeing ground rules**

This is an exercise where you should all agree on how Cherry should be run, and outlines how everyone present will interact with each other throughout the sessions.

- Ask the group: What are the most important things about how we work as a group? Examples might be:
  - listening to others when they are talking, being non-judgemental, respecting others, confidentiality, not using mobile phones in the sessions
- Write these down on a large sheet of paper or flip chart and pin up. This should then go up at every session as a reminder; you can refer to it if people are not sticking to their promises.

10.15 – 10.35: **Why eating well matters**

**Brainstorm**

- What did parents and carers eat as children?
- What do they do differently now and why?
- Ask what parents and carers would like to improve about what they eat or what their child eats
Use flip chart, divided into two sides:

WHY EATING WELL MATTERS
‘FOR YOU’ | ‘FOR YOUR CHILD’

Talk about what they think is important for each – there are no right or wrong answers, it is down to personal opinion. Possible answers include:

For the child
- Growth (weight and height) and development
- Ensuring correct weight for height
- To be active
- Avoiding illnesses and infections
- Protecting teeth from decay
- Learning to enjoy a range of foods so they can eat well as an adult

For the adult
- Protecting from illnesses and infections
- Reducing the risk of becoming overweight or underweight
- Reducing risk of diseases such as cancer and heart disease
- Protecting teeth from decay
- Protecting our mental health and well-being
- Important part of our social life and culture – food is a pleasure

For further information and healthy eating tips, see Further Information on page 18.

Handouts
Department of Health Eatwell plate leaflet
Feeding Your Toddler leaflet (this can be downloaded at www.food.gov.uk/multimedia/pdfs/feedtoddler0310.pdf)

Discussion
The Eatwell plate
The Eatwell plate

The Eatwell plate makes healthy eating easier to understand by showing the types and proportions of foods we need to have a healthy and well balanced diet. It shows how much of what you eat should come from each food group. This includes everything you eat during the day, including snacks. You don’t have to get the balance right at every meal, but try to think about it over a whole day or week.

This means that you should eat plenty of fruit and vegetables, plenty of starchy foods, (e.g. bread, rice, potatoes, pasta etc.); some milk and dairy; some meat, fish, or other sources of non-dairy protein (e.g. eggs, beans, soya) and only a small amount of foods and drink high in fat or sugar

Foods and drinks high in fat or sugar
Although these are on the Eatwell plate, this does not mean there is a requirement to eat them. The section is there as a guide for the maximum that should be eaten.

People may think that their child needs sugar; we get enough sugar naturally in foods, and as part of complex carbohydrates, and therefore there is no minimum requirement.

- What is the Eatwell plate?
- Have parents seen it before?
- Can anyone explain what it is?
- What are the different food groups?

Get the group to reflect on whether they think that what they eat looks anything like this and how it differs?

Is there anything they eat which they do not know where it fits? This is a useful opportunity to find out the sorts of foods parents and carers are used to eating. This can then be kept in mind to help decide which recipes to do with the group in subsequent sessions.
10.35-11.00  Looking at foods and labels

In order to get people talking about eating well and looking at foods, do an activity that uses visual resources. Collect together a variety of food packets of different foods that children might eat or families might buy. Try to get a variety that represent the different food groups and some that are specifically marketed at children’s. Spread them out for everyone to have a look at.

- Encourage everyone to look at foods and labels, and to say which if any are more/less suitable for under-fives.
- Which foods would be good for the whole family?
- Any thoughts about the cost, packaging or marketing?
- Look at the foods which are marketed at children. Would parents and carers buy them? Are they good for children?
  Suggest that they are often small portion sizes, expensive and the same as adult food but marketed differently. Make it clear that these are not needed and it is better for the whole family to eat the same food together. Children should not get used to being given different food to the rest of the family.
- Look at the ingredients and talk about what is in foods (e.g. salt, sugar, fat). Are there any ingredients they do not recognise? Ingredients are listed in order, with those in the largest quantity first.
- Highlight the different names for sugar, e.g. glucose, fructose, high-fructose corn syrup.
- You can use the Sugar/fat/salt Content of Food Game to reinforce these messages (see Appendix 1).
- Show some photos of meals that the whole family can have that fit in with the Eatwell plate; for example you could use CHEW recipe cards with pictures to show the kinds of foods that are useful to offer (see the Resources section on page 47. What about the portion sizes? Are they as expected? Bigger? Smaller?
- Get people to talk about how the family eats and the barriers they may have to eating together.

Reinforce basic healthy eating tips during the discussions, but try to give positive
messages where possible. These are some suggestions if you are stuck but you don’t need to give them all and remember that some advice is different for adults and for children.

Explain ‘Cherry at Home’ task  Goal Setting (Appendix 2)

Cherry at Home

Goal Setting

Give parents and carers a copy of the goal setting template. Think about something they would like to improve about their own diet or their child’s. Encourage them to think of their own ideas. They should be things that can be measured, rather than vague ideas like ‘I will eat more healthily’. If they cannot think of any ideas, some possible suggestions include:

- Cut down on sugar in tea/coffee (e.g. have one teaspoon less in each cup)
- Eat at least one extra portion of fruit every day
- Replace my child’s afternoon snack of chocolate with a banana
Session One: Cook and Eat

The first week’s cook and eat should be an opportunity for children to start handling, touching, smelling, chopping and hopefully tasting different foods. The idea is to expose children to lots of fruit and vegetables they may not have seen or tasted before, for example:

**Vegetables:** radishes, peppers, avocado, courgettes (raw), baby sweetcorn, spring onions, radishes, sugar snap peas, crunchy white cabbage

**Fruit:** mango, tinned peaches (in juice), kiwi, pear, apricot, pineapple,

**Dried fruit:** Figs, dried apricots, dried prunes

Choose a range of options but think about using cheaper and seasonal options that families might be more likely to buy again if their children like them,

- Make sure there is a range of colours and textures in the foods offered
- Include one tinned fruit in fruit juice (e.g. pear, peach) that is easy to cut up
- Where possible, choose foods that do not need a sharp knife to cut up or which can be prepared without cutlery

11.00: Invite children to come in from crèche

- Make sure all the ingredients are prepared before the session begins
- Everyone should wash their hands
- Expect children to take time to settle

11.05 – 11.30: Food preparation activity – vegetables, fruits and dips

*Resources: pictures of fruits and vegetables; knives & chopping boards; plates; vegetables and fruits*

- Give everyone a tasting sheet that they can use to record their thoughts about what the fruits and vegetables
- Invite parents and carers and children to help prepare (wash and chop) raw fruit and vegetables into child size pieces.
- Show everyone how big pieces need to be (use 2-3 cm cubes)
• Show lots of pictures (laminated cards) of fruit and vegetables and get children/parents and carers to tick in ‘like’, ‘don’t like’, ‘never tried’ boxes on the tasting sheet. Generate discussion of why they like or don’t like each one.

11.30 – 11.50: Taster session

• Each parent or carer and child should have a plate so they can serve themselves. Children should be allowed to serve themselves so that parents or carers do not influence what they choose. Parents or carers may be surprised as children may try foods a in a group atmosphere that they have previously refused to try.
• Course leaders will bring pre-prepared foods like (homemade) hummus, yoghurt, breadsticks, pitta soldiers. It is up to you what you bring, according to what is available, as long as it is healthy and fits in with Cherry objectives to encourage families to eat more fruit and vegetables and cut down on sugar.
• Encourage parents and carers to try the same foods as the children, explain how important role modelling is in encouraging children to try new foods.
• Chat to parents and carers informally about whether their child likes to try new foods. This will be a good introduction to the next session on fussy eating.
• Everyone should help to put plates into bowl of soapy water to assist with clearing up.

11.50 – 12.00: Finish and goodbye

• Get feedback on the session using coloured stickers and chart (see Appendix 3)
  o Did the parents and carers enjoy the session?
  o What would they have liked to have done differently?
  o Any questions about what was covered today?
  o Everyone’s opinion is valid and participation is the most important thing. However, some people may choose not to participate fully and that is also acceptable.

• Give a very brief idea of what the next session will involve
  o Dealing with food refusal and tackling fussy eating
  o Introducing new foods
• Ask parents and carers to choose a food preparation activity for next week (give a choice of two or three CHEW recipe cards) for example:
  o Salmon salad with cucumber and pepper sticks
  o Fruity couscous with chickpeas and mixed salad

Tips for Trainers
General healthy eating tips

Try to eat lots of fruit and vegetables, at least 5 different kinds each day. Aim for a range of different colours. They don’t have to be fresh. Frozen or canned are just as good (canned fruit should be in juice not syrup because of the sugar content).

Cut down on sugar – added to drinks, on cereals, in sugary snacks, confectionery, biscuits. This is particularly important for children’s teeth.

Do not add any salt to cooking for children. Lots of food, particularly ready-made/processed food has a lot of salt in it already. Young children cannot breakdown salt and it can cause damage to their kidneys.

Limit fatty foods such as meat products (pies, burgers, canned meats, cheap meat dishes), creamy curries, pastries, pies, sausage rolls, high fat ice cream, fried foods, take away foods (these suggestions can be adapted to the audience).

Include some oily fish in the diet every week (things like mackerel, herring, sardines, pilchards, trout, salmon) or if they do not eat/like oily fish, good alternatives are seeds.

Only whole milk is appropriate for under 2s. You can switch to semi-skimmed or 1% milk for everyone in the family over the age of 2 if children are eating well (this is because small children need the calories that whole milk provides).
Top tips for healthy eating for you and your children

1. Try to eat together as a family as much as you can so that mealtimes are sociable and enjoyable occasions. Children can eat the same healthy food as the rest of the family, but make sure that you do not add salt and sugar to family meals if sharing them with young children and that foods are cooked thoroughly. Children do not need special food just for them.

2. Eat lots of fresh fruits and vegetables and aim to get your five a day. Remember that fresh, frozen, canned (in natural juice) and dried all count (but dried fruit should only be eaten with meals as it is has a high sugar content which can be harmful to young teeth).

3. Get your children involved in the kitchen. Give them simple tasks to do such as washing and chopping vegetables.

4. Refer to the Eatwell plate leaflet when planning meals and try to provide a healthy balance for your children.

5. Use herbs, spices, vegetables and garlic to flavour food instead of adding salt and avoid very salty ingredients such as bottled sauces and flavourings such as soya sauce and ketchup.

6. Have a go at some of the Cherry recipes at home and tell us how you get on.

7. Use the portion size information on the recipe cards as a guide to the amounts of foods to serve at meals and snacks.

Useful resources to help you

Feeding Your Toddler leaflet  (provided in session 1)

Five a day website  www.5aday.nhs.uk
Session Two: Introducing New Foods (“fussy eating”)

Aims and Objectives

- To recap the first session
- To develop parents’ and carers own ways of changing their eating habits
- To understand what fussy eating is, and why it occurs
- To get parents, carers and children involved in food preparation
- To explain the ‘Cherry at Home’ task: Tiny Tastes

Learning outcomes

- To enable parents and carers to handle food refusal effectively and build their confidence
- To encourage parents and carers to introduce new foods to their children

Resources

- Cherry folders and pens for any new parents or carers who attend
- Flipchart paper and pens
- Doll and children’s toy highchair, 2 children’s sized bowls and spoons
- Tiny Tastes charts and accompanying info sheet
- Cherry stickers
- Top Tips No.2
- Cooking equipment
- Ingredients for recipe
- CHEW recipe card hand outs
- Coloured stickers and charts for evaluation
Session Two

10.00 – 10.20: Recap from last session

Ask parents and carers:

- What were the key messages you took home last week?
- Has anyone tried anything different to eat at home since last week?
- Be encouraging and enthusiastic about any changes that have been made, however small
- Remind parents and carers that changing behaviour can be hard, so they should persevere and try not to give up
- Provide answers to any questions from last week (if they are general and useful to all, if not give to parents or carers individually)
- Explain what will children be cooking and tasting today?

10.20 – 10.40: Dealing with food refusal and fussy eating

See the food refusal ideas sheet for how to use words and talk about strategies (Appendix 4)

Ask parents and carers:

- Have they experienced fussy eating with their children?
- What is fussy/picky eating?
  - Rejecting whole groups of foods (especially vegetables)
  - Only eating a few foods
  - Rejecting anything new
- Why do parents think it might happen? Examples of things they might suggest are shown below:
  - Children are born with a sweet tooth which is why they may not want to eat their greens
  - They often don’t like sour or bitter tastes
  - They often like foods that contain lots of calories (high in fat or sugar)
First opportunity to assert their independence

Why is it important to deal with food refusal?
- Remember that for many parents and carers food refusal can be stressful, upsetting, and can often lead to them thinking they may be bad parents
- Mealtimes may turn into a battleground
- Parents and carers resort to giving their children less healthy foods that they know their children will eat. Parents and carers may worry about wasting food if they are on a tight budget

10.40 – 11.00: Introducing new foods

Ask parents and carers
- Which foods will their children not eat?
- Has anyone been successful in introducing a new food? If so, how?

Encourage parents and carers to share stories and ensure the course leader has some to offer to start the conversation. This will help parents and carers to realise that it is possible to overcome fussy eating but that they may need some support. Parents and carers like to know that they are not the only ones to experience children who are fussy eaters.

Give examples of strategies that might help:
- repeated exposure up to 10 times
- family role models e.g. eating healthy meals together as a family
- encouragement and praise
- including a range of foods on the plate that you know they will eat alongside the food you are trying to introduce

Hand-out Tiny Tastes Chart & accompanying information sheet
Top Tips Summary

Go through the Tiny Tastes chart and accompanying information sheet and explain how parents can use it
Session Two: Cook and Eat

11.00: Invite children to come in from crèche

- Expect children to take time to settle
- Ingredients should be prepared before the session

11.05 – 11.30: Food preparation activity

*Ingredients, knives, plates and other cooking equipment*

- Use the recipe selected in the previous session, for example
  o Salmon salad with cucumber and pepper sticks
  o Fruity couscous with chickpeas and mixed salad
- Course leader will demonstrate how to make it first and then parents, carers and children can have a go
- Emphasise that the session is about getting involved rather than cooking skills
  o Try to get everyone involved, especially timid/shy members of the group
  o Make sure parents and carers are working with their children and the children are fully engaged
  o Aim to talk individually to every parent at least once

- Provide a recipe card with an image showing the appropriate portion size for a child aged 1-4 years.
  o Ask parents and carers if the portion sizes are what they expected, bigger, smaller?

- Suggest alternatives and modifications to the recipes provided, for example:
  o Cheaper alternatives to ingredients (tuna instead of salmon? Dried herbs not fresh? Frozen or tinned vegetables?)
  o Seasonal ingredients
  o Extra herbs or spices
  o Different ways of presenting food
11.30 – 11.50: Taster session

- Encourage families to eat together in the session
- Families can take the food home if they would like
- Everyone to put plates into bowl of soapy water to assist with clearing up

11.50 – 12.00: Finish and goodbye

- Get feedback on session using coloured stickers and chart
  - Did the parents and carers enjoy it?
  - What would they have liked to have done differently?
  - Any questions about what was covered today?
- Summary of next session
  - Healthy snacks for children under 5
  - Healthy drinks for children under 5
- Ask parents to choose a food preparation activity for next week (choice of CHEW recipes):
  - Spicy potato wedges with tomato salsa and/or Guacamole
  - Bean burgers
  - Chickpea fritters
  - Mini meatballs

Explain ‘Cherry at Home’ task

Cherry at Home

Introducing new foods with Tiny Tastes

- Ask parents and carers to try introducing a new food at home before the next session using the strategies discussed and the Tiny Tastes chart
- Use the instruction sheet for guidance

Thank everyone for coming and remind/encourage them to come back next week
Top tips for introducing new foods

1. Try something new alongside something you know your child will eat.

2. Ask your child to try a small taste at first. If your child refuses to taste today, try again another day.

3. Stay calm if your child refuses food. Do not let mealtimes become a battleground – children remember negative experiences associated with food.

4. The magic number 10. Children may need to try a new food as many as 10 times before they get to like it.

5. Give your child lots of encouragement and praise when they try a new food.

6. Involve your child in simple food preparation tasks – they will be more likely to want to taste the food.

7. Be a good role model – eat the new food yourself and say how much you like it.

8. Eat together as a family and with others as often as possible – children love to copy older siblings and other children.

9. Do not hide vegetables in sauces unless it’s a last resort – children need to get used to the taste of individual foods

10. Use the Tiny Tastes chart as an incentive/reward for trying new foods. Do not reward them with sweets or another food.

Useful resources to help you

Tiny Tastes Chart and information sheet
Session Three: Healthy snacks and drinks for children

Aims and Objectives

1. To recap information given at session 2
2. To expand parents’ and carers’ options for healthy affordable food choices for the family
3. To get parents, carers and children involved in food preparation
4. To explain ‘Cherry at Home’ task: try introducing a healthy snack or drink and continue with Tiny Tastes from session 2

Learning outcomes

1. To encourage parents and carers to provide healthier snacks (focus on fruit and vegetables and reducing sugary snacks) by giving them ideas that are cheap and easy to prepare
2. To encourage parents and carers to provide healthier drinks (focus on reducing sugar)
3. To increase awareness of food labels and the sugar content of popular drinks

Resources

- Examples of good snacks for under 5s (photos)
- Examples of children’s drinks bottles
- Can of coke and penny
- Small pieces of card/paper and blu-tack
- Flipchart paper and pens
- CHEW snack recipe cards
- Top Tips No.3
- Appropriate cooking equipment
- Ingredients for chosen recipe card
- CHEW recipe cards
- Coloured stickers and charts for evaluation
Session Three

10.00 – 10.20: Recap from last session

- Did parents and carers try introducing a new food? Was it successful? Did they use the Tiny Tastes chart?
- Emphasise that they should keep trying if it did not work the first time.
- Did parents, carers and children enjoy the food preparation activity?
  - What were the best/worst bits?
- Provide answers to any questions from last week if general and useful to all
- What will children be cooking and tasting today?

10.20 – 11.00: Healthy snacks and drinks

Snacks

- Talk about the need for children under 5 to eat regularly and the concept of mini meals to provide important nutrients and energy
- What are children currently eating for snacks?

- Ask people to look at healthy, affordable snack ideas for children using CHEW resource cards (e.g. breadsticks and hummus, curried rice, toast fingers)
  - Point out portion size information on the back of the cards
  - Are portion sizes as they expected? Bigger? Smaller?
  - Ask parents and carers to say what their children might try and what they would not, and why
  - If parents and carers mention dried fruit, say this is high in sugar and should only be given at mealtimes – not as a snack

- If parents and carers say “my child won’t eat that” suggest that they might try tiny tastes and other strategies from session 2
Notes on the importance of snacks for under fives

- Children have small stomachs so need to eat little but often
- They should eat regularly every 3 hours, but there is a fine line between regular snacks and ‘grazing’
- Help maintain energy levels through the day
- Children should have a mid-morning and mid-afternoon snack
- They are an important part of children’s diets and not just a ‘shut me up’ for parents to use

Drinks

- Ask for examples of children’s current drinks
- Ask if anyone still uses a bottle and what for
- Using a variety of drinks bottles, ask parents and carers which ones they think are safe for children’s teeth. Examples to use are:
  - Squashes
  - No added sugar drinks
  - Fruit juices
  - Fruit Shoots
  - Milk
  - Water
  - Capri-Suns etc.

Tooth decay and tooth erosion

- Do parents and carers know what causes tooth decay?
- Are they aware of tooth erosion, what causes it and why it is a problem?

How can you encourage children to drink fewer sweet drinks?

- Dilute drinks a little more each time
- Avoid cartons of pre-prepared drinks
- Always take water when going out
- ‘Only buy for special occasions
Notes on appropriate drinks for under fives as above

Milk and tap water are the best drinks for under-fives. Children should be given whole (full fat) milk until the age of 2.

Sugar is the main cause of tooth decay. Acidic foods and drinks ‘dissolve’ away the surface of the teeth and are the main cause of tooth erosion.

Diluted fruit juice (50:50) should be drunk at meal times only, as the sugars can still damage teeth. Limit fruit juice to one cup per day.

Fruit ‘juice drinks’ (e.g. Capri Sun, Fruit Shoots) do not count towards ‘Five a Day’ as they have a very low real fruit content and high sugar/sweetener content and are not recommended.

Artificially sweetened (no added sugar) drinks get children accustomed to having sweet things so should not be encouraged. They are often acidic which encourages tooth erosion.

Children under five should not have caffeinated drinks (tea, coffee, colas, energy drinks)

Drinking from a bottle after 1 year can damage teeth and speech. Only milk and water should ever be given in a bottle. Other drinks in bottles can be damaging to teeth, especially at bedtime or sleep time.

Demonstration

- Drop a penny into a bottle of regular cola (not Diet).
- Save the bottle and look at it again next week to show the effect of sugar and acid

Handout Top Tips & Islington leaflets on snacks and drinks
Session Three: Cook and Eat

11.00: Invite children to come in from crèche

- Expect children to take time to settle
- Ingredients should be prepared before the session

11.05 – 11.30: Food preparation activity

- Use the recipe selected in previous session (light meal or snack)
  - Salsa, potato wedges, guacamole
  - Bean burgers
  - Chickpea fritters
  - Mini meatballs
- Course leader to demonstrate the recipe first and then parents, carers and children can have a go
- Emphasise food involvement rather than cooking skills
  - Try to get everyone involved, especially timid/shy members of the group
  - Make sure parents and carers are working with their children and children are fully engaged
- Provide recipe card with image showing appropriate portion size for a 1-4 year olds
  - Ask parents and carers if the portion sizes are what they expected, bigger, smaller?
- Suggest alternatives and modifications to the recipes provided
  - Cheaper alternative ingredients
  - Seasonal ingredients
  - Extra herbs or spices
  - Different ways of presenting foods

11.30 – 11.50: Taster session

- Encourage families to eat together in the session
- Families can take the food home if they would like
- Everyone to put plates into bowl of soapy water to assist with clearing up
11.50 – 12.00: Finish and goodbye

- Get feedback on session using coloured stickers and chart as before
  - Did the parents and carers enjoy it?
  - What would they have liked to have done differently?
  - Any questions about what was covered today?

- Give a very brief idea of what the next session will involve
  - Healthy eating on a budget
  - Tips for food shopping

- Ask parents and carers to choose a food preparation activity for the next week (choice of CHEW recipes):
  - Chicken fajitas
  - Tuna and sweetcorn pasta
  - Chicken risotto
  - Chilli con carne
  - Crunchy apricot and pear layer (aim to do main course and dessert)

- Explain ‘Cherry at Home’ task
- Thank everyone for coming and remind/encourage them to come back next week

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Cherry at Home

Trying new snacks and drinks

- Ask parents and carers to try some healthy snacks and drinks at home
- Ask parents and carers to write down what their child ate for one or more meals during the week

Tiny Tastes (week 2)

- Carry on using Tiny Tastes (as explained last week)
Top Tips for healthy snacks and drinks

1. Children need three meals a day, as well as healthy snacks between meals. Think of snacks as mini meals to help your child to grow and develop.

2. Snacks are a great way to help meet your child’s five a day, so try some bits of fresh fruit and vegetables between meals.

3. Choose snacks that are low in fat, salt and sugar. Why not try unsalted rice cakes or breadsticks with cream cheese as an alternative to crisps? Finger foods such as bread or toast soldiers and popcorn (with no added salt or sugar) make cheap and healthy snacks for kids.

4. Encourage children to drink tap water when they are thirsty. Water quenches thirst, does not spoil the appetite and does not damage teeth. Drink water yourself and show that you enjoy it. Try keeping tap water in the fridge in colourful containers.

5. Milk is a healthy drink for 1-4 year olds. It is a good source of calcium and other important nutrients. Avoid giving children milk close to mealtimes as it may fill them up and reduce their appetite.

6. Whole cow’s milk is suitable for most children over the age of 1 year. Semi-skimmed milk can be introduced after the age of 2 years. Skimmed milk is not suitable for children under 5.

7. Children may have one glass of diluted fruit juice (100% pure fruit juice and water 50:50) either with their main meal or with breakfast. Some vegetable and fruit juices contain vitamin C which helps the body to absorb iron from food.

8. Diluted fruit juice can be made into colourful ice cubes to make drinks more fun!

9. Encourage children to drink from an open beaker or cup. Children over the age of 1 year should be discouraged from drinking from a bottle, as this will damage their teeth. Sucking from a bottle may contribute to tooth decay. If your child still wants a bottle, only use it for water or milk during the daytime.

10. Tea and coffee are not good for young children. Try warm milk instead.

Useful resources to help you

Snacking for children up to 5 leaflet (provided in session 3)
Drinks for children up to 5 leaflet (provided in session 3)
Session Four: tips for food shopping

Aims and Objectives

1. To recap the information provided at session 3
2. To make healthy eating seem more achievable for parents and carers on a low income
3. To get parents, carers and children involved in food preparation
4. To explain the ‘Cherry at Home’ task

Learning outcomes

1. To increase awareness of how to eat a healthy diet on a budget
2. To dispel the myth that fruit and vegetables are expensive foods

Resources

• Can of coke and penny from last week
• Flipchart paper and pens
• Cost comparison for fruits and vegetables
• Top Tips No. 4
• Cooking equipment
• Ingredients for chosen recipe
• Extra equipment for recipe (once selected)
• CHEW recipe cards
• Coloured stickers and charts for evaluation
• Evaluation tools - coloured balls, boxes or post-it notes, paper
Session Four

10.00 – 10.20: Recap from last session

Ask parents and carers:
- Recap Tiny Tastes (week 2)
- Did the children like the healthy snacks last week?
- Did they try any healthy snacks or drinks at home?
- Show effect of coke on penny and link this effect to teeth and dental erosion
- Provide answers to any questions from last week
- What will children be cooking and tasting today?

10.20 – 10.40: Healthy eating on a budget

- Ask parents and carers where they do their food shopping
  - Do they have any issues around food access e.g. travel, carrying heavy bags, lack of affordable choices Does anyone shop online?
- Why do they shop where they shop and for what reasons? Explore the following:
  - Cost
  - Convenience
  - Familiarity
- Talk about fruit and vegetable costs in supermarkets
  - Bagged prices versus loose prices
  - Provide some cost comparison with some examples from a market versus large supermarket
    - Three way comparison: bagged, loose and frozen per kg see Appendix 5
- What meals did children eat last week?
  - How could the meals be made healthier, cheaper and increase fruit and vegetables?

Hand-out
Top Tips summary hand-out
Session Four: Cook and Eat

11.00: Invite children to come in from crèche
- Expect children to take time to settle
- Prepare ingredients for food preparation while children are settling

11.05 – 11.50: Food preparation activity using recipes appropriate for a low budget
- Suitable recipes include:
  - Tuna and sweetcorn pasta with cucumber and pepper sticks
  - Chicken risotto and red pepper sticks
  - Chicken fajitas
  - Tuna and sweetcorn pasta
  - Chicken risotto
  - Chilli con carne
  - Crunchy apricot and pear layer (aim to do main course and dessert)
- Suggest alternatives and modifications to the recipes provided
  - Cheaper alternative ingredients
  - Seasonal ingredients
  - Extra herbs or spices
  - Different ways of presenting foods
- Emphasise that the whole family can eat the same meal
- Parents, carers and children can taste when ready
- Provide CHEW recipe card with image showing appropriate portion size
- Encourage parents and carers to try the recipe at home
- Provide the remainder of Cherry recipe cards

11.50 – 12.00: Finish and goodbye
- Get feedback on session using coloured stickers and chart
  - Did the parents and carers enjoy Cherry?
  - How useful was Cherry for parents and carers?
What would they have liked to have done differently?
How could it be improved?

• Repeat the evaluation data collection exercise from week 1 with coloured balls or with sheets of paper and post it notes

• Signposting to local services
  You may want to follow up families later on and ask for their contact details

• Thank parents and carers for taking part

**Tips for Trainers**

**Cooking and shopping economically**

Cook in advance where possible: e.g. make a large quantity of tomato sauce and use it as a basis for different recipes (e.g. homemade pizzas, pasta sauce, shepherd’s pie etc.)

Freeze leftovers if you have the space (lots of fruit and vegetables freeze well, e.g. bananas cut up which can then be blended straight from the freezer

To encourage children to eat more vegetables, cut vegetables finely, blend into a sauce, make into different shapes

Some local greengrocers and shops sell fruit and veg bowls for £. Although they often need to be eaten up quickly, they are an inexpensive way of buying fruit and vegetables which can then be made into stews, sauces and smoothies

It is cheaper (and healthier) to buy plain yogurt and add your own fruit. Fruit yogurt has a high sugar content so is best kept to a minimum.

Cheaper ranges in supermarkets are just as good: for example, value apples are smaller but they are child sized. They may not be as pretty but they are just as healthy!

There is no need to buy ‘children’s’ ready meals: they are frequently the same as adults’ meals with different packaging and often don’t meet nutritional guidelines. They are also expensive and get children used to eating pre-prepared food.
Top tips for food shopping and healthy eating on a budget

1. Buy frozen or canned fruit and vegetables – they are sometimes much cheaper than fresh and just as healthy and they won’t go off. Frozen peas and sweet corn tend to be popular with children as they are colourful.

2. Compare prices between shops and between brands. The supermarket’s own brand is usually the cheapest. Loose fruit and vegetables may be cheaper than bagged ones. And look out for special offers!

3. Ready meals tend to be more expensive than homemade meals. Soft drinks and foods branded especially for children may also be more expensive than basic healthy options.

4. Potatoes are incredibly versatile and can be used to make simple tasty meals like jacket potato with baked beans and cheese. It is cheaper to buy raw potatoes than processed ones like oven chips.

5. Try making a simple tomato sauce (using onions, garlic and canned tomatoes) and this can be used as the base for lots of different meals, like curries, chilli, pasta dishes. Just add different vegetables, herbs and spices to give it flavour.

6. Buying foods in bulk can be more economical. Large bags (1 or 2 kg) of non-perishable foods like pasta and rice are usually cheaper per 100 grams than smaller bags (500 grams).

7. Look for the price per 100 grams or per kg on the shelf, which makes it easier to compare products.

8. Ask a relative or friend to look after the children so you can go shopping on your own. This will make it easier to look at food labels and prices.

9. If you do need to take the children, make sure they are not hungry or tired when you are shopping. Give them a toy to play with in the trolley – remember to tie it to the trolley so it doesn’t get lost. Or give them something to do outside of the trolley, like counting vegetables into the bag or searching for certain items.

10. Internet shopping can save you a lot of time and stress but you may have to pay for the delivery (the delivery cost may only be a few pounds depending on flexibility and
time). Ordering online prevents you seeing extra temptations however and can save you money.

**Useful resources to help you**

Cost comparison sheet (provided in session 4)

My Supermarket – This online shopping website helps you to compare and get the best possible price for your grocery shopping at Tesco, ASDA, Sainsbury’s or Ocado. Use the NHS Choices Health Checker tool to keep track of your trolley; it can suggest healthy swaps based on your favourite items.

www.mysupermarket.co.uk
Appendix 1

Fat, Salt & Sugar Game

AIM
To increase awareness of the actual fat, salt and sugar content of familiar and popular food and drink items.

EQUIPMENT
3 boxes: one each for fat, salt & sugar.
Each box should contain:

- Three empty food or drink packets with the nutrient label blacked out
- Three plastic bags containing the actual amount of fat, salt & sugar contained in each of the food or drink items

Choose food and drink items that:

- Parents and carers may not realise contain so much fat/salt/sugar e.g. cheese sandwich (salt), fruit juice (sugar) etc.
- Children typically like or ones that are marketed at young children e.g. Fruit Shoots.

TASK
Match up each packet with the correct amount of fat/salt/sugar

HOW IT WORKS
Give the groups 5-10 minutes to discuss and order the items, then discuss with the whole group what the correct answers are.

Large groups should be split into three smaller groups.

This activity usually generates lots of questions, so course leaders should feel confident in their knowledge, or know someone who they can refer questions to.
Appendix 2

Goal setting

My healthy eating goal is....

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

My healthy eating goal is....

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

My healthy eating goal is....

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix 3

Getting feedback

Ideas for collecting data

In order to get feedback from groups in a simple, non-threatening way – without the need for participants to write anything done, a number of techniques can be used. These will not provide individual responses, but group responses, and are therefore anonymous.

1. Using post-it notes on a flip chart (or notice board)

   This method should be used for the evaluation at the end of each session.

   Write each question on a separate piece of flip chart paper and draw the grid of faces underneath each question (if relevant).

   Questions, for example:
   - Did you enjoy today’s session?
   - Did you learn new things about healthy eating?
   - Did you enjoy the food preparation activity?
   - Are you likely to use that recipe at home?
   - What would you like to have done differently? (smiley faces not needed)
   - How could it be improved? (smiley faces not needed)

   ![Smiley face](image)
   ![Neutral face](image)
   ![Sad face](image)

   Give each participant some post-it notes in different colours and ask people to put them on the appropriate section of the flip chart paper. If they want to add written comments for any of the questions, they can do this on the post-it notes.

   With this technique you can count up responses at the end and record them on the sheet.

2. Using coloured balls and boxes
This method should be used for data collection at the start and end of Cherry.

Give each person some coloured balls and ask them to put them in the appropriate container in response to each question. The table shows how you should mark the boxes with the answers they can choose from.

Questions:

a. How confident do you feel about knowing what the right foods are for under 5s to eat?
b. How confident do you feel about knowing how much under 5s should eat?
c. Are you concerned that your child doesn’t eat enough fruit and vegetables?
d. Are you concerned that you don’t eat a good diet yourself?
e. Would you like more information on how to eat well?

<table>
<thead>
<tr>
<th>Box 1</th>
<th>Very confident</th>
<th>Questions a and b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box 2</td>
<td>Neutral</td>
<td>Questions c, d and e</td>
</tr>
<tr>
<td>Box 3</td>
<td>Not at all confident</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Don’t know</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

You ask each question in turn and the parents answer by putting their ball in the appropriate container. Then you count the balls in each box, record on the sheet, give the balls back and do it again.
Appendix 4

How to deal with food refusal

Using a doll (or other toy) in a high chair or in a sitting position, and with a bowl and two spoons as props, you can demonstrate some of the techniques to use if children refuse food. Key is to be calm, not to make it personal and not to reward the refusal. Food refusal and fussy eating is a phase and will pass.

This is one possible way of supporting parents to deal with food refusal. You may prefer to do it without a doll and ask the parents to do the role play themselves.

1. **Sitting with your child and eating together: eating your own food and giving positive feedback**

   ‘This is delicious/tasty, I am really enjoying it’

   ‘I am going to finish all mine’

2. **Offering choice**

   ‘Would you like carrot sticks or carrot pennies?’

   ‘Would you like 3 beans or 4 beans?’

3. **Involving the child**

   ‘How old are you? 3? So can you eat 3 spoons?’

   ‘What is your favourite colour? Would you like a blue spoon to eat with?’

4. **Encouraging independence**

   ‘I wonder if you can eat that all up by yourself.’

5. **Praising**

   ‘Well done, you gave that food a try’

   ‘You are using your spoon really well’
6. Offering and acknowledging

‘That’s fine if you don’t like it today’

7. Taking away the personal

‘I do like it when everyone enjoys their dinner’

If meals are refused what are good choices to offer?

Offer savoury foods – any type of savoury bread or sandwich, toast with peanut butter, eggy bread, any vegetable.

Ask parents and carers if they know any children who refuse food and what they will eat – and talk about those choices.
### Appendix 5

#### Fruit and Vegetable Cost Comparisons

<table>
<thead>
<tr>
<th>Name of vegetable</th>
<th>Bagged</th>
<th>Loose</th>
<th>Frozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broccoli</td>
<td>e.g. £1.99</td>
<td>e.g. £1.74</td>
<td>e.g. £1.15</td>
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<tr>
<td>Cauliflower</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baking potatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red peppers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Name of fruit

<table>
<thead>
<tr>
<th>Name of fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banana</td>
</tr>
<tr>
<td>Apples (Pink Lady)</td>
</tr>
</tbody>
</table>
Appendix 6

Cherry tutor feedback form

*Please complete this sheet after each session to help monitor the success of the programme and see how it could be improved.*

How many parents and carers attended the session? ______________________________________

Which discussions or activities were most popular during the session?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Were there any problems with particular discussions or activities e.g. parents and carers were difficult to engage, parents and carers felt uncomfortable, not relevant to group?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

What went well and what didn’t?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Did the parents and carers ask any questions that you couldn’t answer? If so, please make a record.

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
Appendix 7

Resources

This section contains further information to support you to deliver Cherry.

**Tiny Tastes Charts**
These will be available from Weight Concern (http://weightconcern.co.uk/). Please contact Dr Lucy Cooke, UCL for more information (lucy.cooke@ucl.ac.uk)

**CHEW resources**
www.firststepsnutrition.org

Information and recommendations about eating well for use by individual child carers or by those offering training to owners, managers, catering staff, local authority staff, child minders, teachers and other carers in environments providing child care for under-5s.

**NHS Choices**
www.nhs.uk

For information on eating well for all population groups, see the Live Well section of this website.
The following publication can also be downloaded from the website:

**5 a Day**
Useful information on encouraging families to increase fruit and vegetable consumption and meet their 5 a Day can be found at http://www.nhs.uk/livewell/5aday/Pages/5ADAYhome.aspx

**Department of Health Resources**

**The Eatwell plate**
This can be downloaded from http://www.food.gov.uk/multimedia/pdfs/publication/eatwellplate0210.pdf

**Advice on Feeding Your Toddler**
A leaflet for parents giving advice on can be downloaded from www.food.gov.uk/multimedia/pdfs/feedtoddler0310.pdf

Resources from the British Dietetic Association
www.bda.uk.com

The following publications are available from the BDA and may be useful for parents:
Feeding the Vegetarian Child
Food for the Growing Years (2008)
Help My Child Gain Weight
Milk-Free Advice
My Child Still Won’t Eat

Signposting
If parents have further questions or individual concerns, refer them to their health visitor or GP.
Certificate of Attendance

This is to certify that

______________________________

Successfully completed cherry

At ____________________________

On ____________________________

Signed ________________________
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Notes</th>
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<tbody>
<tr>
<td>10.00</td>
<td>Welcome and Introductions</td>
<td>(RW)</td>
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<tr>
<td></td>
<td>Objectives of the day</td>
<td></td>
</tr>
<tr>
<td>10.15</td>
<td>Introduction to Cherry</td>
<td>(RW &amp; AH)</td>
</tr>
<tr>
<td>11.00</td>
<td>Coffee</td>
<td></td>
</tr>
<tr>
<td>11.20</td>
<td>What makes a good trainer?</td>
<td></td>
</tr>
<tr>
<td>11.40</td>
<td>Session content</td>
<td>(HC)</td>
</tr>
<tr>
<td></td>
<td>Run through each session in detail</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trainer manual</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>1.45</td>
<td>Fussy eating</td>
<td>(LC)</td>
</tr>
<tr>
<td>2.15</td>
<td>Session content</td>
<td>(HC)</td>
</tr>
<tr>
<td>3.00</td>
<td>Resources for Cherry</td>
<td>(HC)</td>
</tr>
<tr>
<td></td>
<td>Leaflets</td>
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<td></td>
<td>Toys</td>
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<td>3.15</td>
<td>Coffee</td>
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<td>3.30</td>
<td>Paperwork for Cherry – parental feedback</td>
<td>(HC &amp; AH)</td>
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<tr>
<td>3.45</td>
<td>Questions and Answers</td>
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<tr>
<td>4.00</td>
<td>Finish</td>
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</table>

RW – Richard Watt
AH – Arabella Hayter
HC – Helen Crawley
LC – Lucy Cooke
Dear [name of CC Head],

As one of the 3 children’s centres in Islington which has been randomly selected to host CHERRY, a new healthy eating programme, we would like to explain what will be involved and to confirm that you are still happy to go ahead.

CHERRY is a healthy eating programme to be delivered over 4 week period. Ideally, there will be 3 two hour sessions per week, however this may be scaled down if it is not possible to find the time or space to do so. Key components will include: food activities for parents and children attending centre; food training for centre staff; food policy for centres; home based food support for parents

We, the research team will take the responsibility to:
- Recruit approximately 21 families with children aged 18-59 months per centre into the project
- Gain written consent from parents to take part
- Interview parents about their food choices in a face to face interview and conduct 2 follow up telephone calls
- Deliver healthy eating programme to families in the centre
- Conduct focus groups with selected parents and staff to talk about the healthy eating programme
- Collect follow up data 6 months after the programme was delivered with a second fact top face interview with parents and 2 follow up telephone calls

What we ask from you, the centre, is to:
- Be involved in brief consultation with the research team before the programme commences to ensure the intervention will be acceptable to parents and staff
- Assist with the recruitment of families: this may be by handing out leaflets, adding something into newsletters and correspondence with parents etc.
- Support the research team in terms of support to use the facilities
- Accommodate the programme into the centre's existing timetable and room booking
- Support the delivery of the healthy eating programme
- Provide basic equipment where possible, for example basic kitchen utensils, pens and paper etc.
- Some staff will be asked to participate in focus groups to help evaluate the programme

The benefits for participating in CHERRY will be that:
- Centres will be given £100 as a thank you for helping the research team
- Each family completing the interviews will receive a £7.50 gift token
- Centres will have some external input for food activities
- Nutrition training for centre staff
- Development of nutrition resources which centres can then use during CHERRY and after
- Staff will gain new knowledge and understanding of how to help families improve the quality of children’s diets
It would be good to come and talk to you at some point in the next couple of weeks to confirm a few further details with you, including when would be the most suitable time for you to run CHERRY. The programme will take place between October 2010 and April 2011; when it takes place at [insert CC name] within this time will depend on your existing activities and timetabling issues.

Please do not hesitate to get in touch if you have any other questions. We hope that this is all acceptable and look forward to working with you over the coming months. We would appreciate if you could let us know as soon as possible if you are happy to proceed by replying to Arabella Hayter in writing, either by letter or by email and then we can arrange a time to come and visit you.

Best wishes,

Professor Richard Watt
Professor & Honorary Consultant of Dental Public Health
Dear [name of CC head],

As one of the 3 children’s centres in Islington which has been selected to act as a control for the CHERRY programme, we would like to explain what will be involved and to confirm that you are still happy to go ahead.

As already described, three centres across Islington have been randomly selected to act as a control for the purpose of comparing the effect that the intervention has on families against centres where it does not take place. As a control centre, we ask that while any existing nutrition, health and parenting activities/services can be maintained, no new healthy eating programmes should be introduced during the study period (approximately 12 months).

We, the **research team** will take the responsibility to:

- Recruit approximately 21 families with children aged 18-59 months into the project per centre
- Gain written consent from parents to take part
- Interview parents about their food choices in two face to face interviews and conduct follow up telephone calls over the period of the study.

What we ask from you, the **centre**, is to:

- Assist with the recruitment of families and support the research team in terms of support to use the facilities
- Agree not to start new nutrition activities until after all the data is collected in (this will be in 12 months time)

We appreciate that as one of the control centres, it may seem like this will be extra work for little return. However, we would like to give centres £100 as a thank you for helping the research team, and each family completing the interviews will receive a £7.50 gift token to thank them for their time. On completion of the study all the resources and training developed as part of the study will be made available to your centre.

Please do not hesitate to get in touch if you have any further questions. We hope that this is satisfactory and look forward to working with you over the coming months. We would appreciate if you could let us know as soon as possible if you are happy to proceed by replying to Arabella Hayter in writing, either by letter or by email.

Best wishes,

Professor Richard Watt  
Professor & Honorary Consultant of Dental Public Health
Appendix 17 Dissemination during the study

The research team gave presentations to groups locally (e.g. groups of children’s centre staff, various, 2009-2012), regionally (the SW Regional Public Health Team, 2010) and nationally (Department for Education, 2010) to share information, to learn about other projects and work taking place in early years, and to receive feedback on various stages of the study. Table 17.1 provides a list of the key presentations and publications given as part of the study.

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<th>Audience</th>
<th>Subject</th>
<th>Who</th>
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<td>Final results</td>
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<td>Experiences of running Cherry and initial results at 6 months</td>
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<td><strong>Cornwall</strong></td>
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<td>SW Regional Public Health meeting</td>
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<td>SW dieticians</td>
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<td>Dietetics Research Group-Plymouth University</td>
<td>Preliminary baseline data</td>
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<td>Scibar (general public)</td>
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<td>Food Standards Agency</td>
<td>Study progress at end of Year 1</td>
<td>UCL</td>
<td>July 2010</td>
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<td>Department for Education</td>
<td>Initial findings – development phase</td>
<td>UCL</td>
<td>August 2010</td>
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<td><strong>Academic presentations</strong></td>
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<td>Nutrition Society – poster presentation</td>
<td>Parental food involvement predicts parents’ and children’s diet quality</td>
<td>Plymouth</td>
<td>July 2012</td>
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<td><strong>Publications</strong></td>
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<td>A qualitative study exploring parental accounts of feeding pre-school children in two low-income populations in the UK Maternal and Child Nutrition</td>
<td>Hayter et al</td>
<td>Sep 2012</td>
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